WOODS

FLAIL SHREDDER

Center Drive
Front & Rear Casters
S20CD
S22CD
S25CD
S27CD
S30CD

OPERATOR'S MANUAL

MAN0943
(Rev. 10/30/2014)

WOODS®
Woods Equipment Company

TO THE DEALER:

Assembly and proper installation of this product is the responsibility of the Woods® dealer. Read manual instructions and safety rules. Make sure all items on the Dealer's Pre-Delivery and Delivery Check Lists in the Operator's Manual are completed before releasing equipment to the owner.

The dealer must complete the online Product Registration form at the Woods Dealer Website which certifies that all Dealer Check List items have been completed. Dealers can register all Woods product at dealer.WoodsEquipment.com under Product Registration.

Failure to register the product does not diminish customer's warranty rights.

TO THE OWNER:

Read this manual before operating your Woods equipment. The information presented will prepare you to do a better and safer job. Keep this manual handy for ready reference. Require all operators to read this manual carefully and become acquainted with all adjustment and operating procedures before attempting to operate. Replacement manuals can be obtained from your dealer. To locate your nearest dealer, check the Dealer Locator at www.WoodsEquipment.com, or in the United States and Canada call 1-800-319-6637.

The equipment you have purchased has been carefully engineered and manufactured to provide dependable and satisfactory use. Like all mechanical products, it will require cleaning and upkeep. Lubricate the unit as specified. Observe all safety information in this manual and safety decals on the equipment.

For service, your authorized Woods dealer has trained mechanics, genuine Woods service parts, and the necessary tools and equipment to handle all your needs.

Use only genuine Woods service parts. Substitute parts will void the warranty and may not meet standards required for safe and satisfactory operation. Record the model number and serial number of your equipment in the spaces provided:

Model: _____ **Date of Purchase:** _____

Serial Number: (see Safety Decal section for location) _____

Provide this information to your dealer to obtain correct repair parts.

Throughout this manual, the term **NOTICE** is used to indicate that failure to observe can cause damage to equipment. The terms **CAUTION, WARNING,** and **DANGER** are used in conjunction with the Safety-Alert Symbol (a triangle with an exclamation mark) to indicate the degree of hazard for items of personal safety.

This is the safety alert symbol. It is used to alert you to potential physical injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

DANGER Indicates a hazardous situation that, if not avoided, will result in death or serious injury.

WARNING Indicates a hazardous situation that, if not avoided, could result in death or serious injury.

CAUTION Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

IMPORTANT or ***NOTICE*** Is used to address practices not related to physical injury.

NOTE Indicates helpful information.

ALITEC™
BMP®
CENTRAL FABRICATORS®
GANNON®
GILL®
WAIN-ROY®
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Woods Equipment Company

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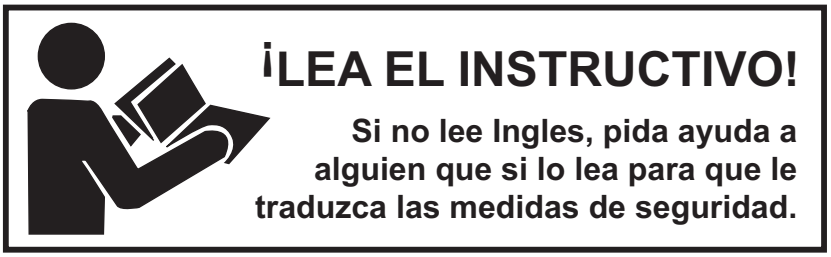
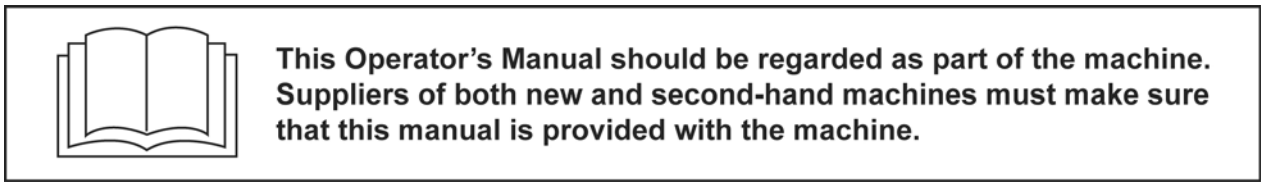



This Operator's Manual should be regarded as part of the machine. Suppliers of both new and second-hand machines must make sure that this manual is provided with the machine.

SPECIFICATIONS

Maximum Outside Body Width:

20′ . . . . . 253 in. (6.4 m)

22′ . . . . . 277 in. (7.0 m)

25′ . . . . . 309 in. (7.8 m)

27′ . . . . . 334 in. (8.4 m)

30′ . . . . . 375 in. (9.5 m)

Cutting Height: . . . . . 3 - 18 in. (7.62 cm to 45.7 cm)

Width of Cut:

20′ . . . . . 247 in. (6.2 m)

22′ . . . . . 271 in. (6.8 m)

25′ . . . . . 303 in. (7.6 m)

27′ . . . . . 327 in. (8.3 m)

30′ . . . . . 360 in. (9.1 m)

Knives:	Cups	"L"	"L" Cut-Off
Number on 20′	116	228	4
Number on 22′	128	252	4
Number on 25′	144	284	4
Number on 27′	156	308	4
Number on 30′	176	348	4

Recommended Tire Size: . . . . . 9.5L - 15,6 ply rated

Tire Inflation Pressure: . . . . . 25 psi

Rotor: Speed . . . . . 1350 RPM dynamically balanced

Drive: PTO . . . . . 1000 RPM

Weight of Shredder (approximate):

20′ w/4 casters* . . . . 4800 lbs (2177 kg)

22′ w/4 casters* . . . . 5100 lbs (2313 kg)

25′ w/4 casters* . . . . 5600 lbs (2540 kg)

27′ w/4 casters* . . . . 5900 lbs (2676 kg)

30′ w/4 casters* . . . . 7400 lbs (3357 kg)

* each caster assembly weighs approximately 214 lbs

IMPORTANT!
BALANCE STATEMENT

Both of the Woods Center Drive Shredder flail tubes are balanced as rotor assemblies to meet or exceed factory standards before installation. After installation, the shredders are statistically inspected to check balance. These factory efforts allow the shredder to operate smoothly and be free of excessive vibration when delivered to the customer.

⚠ WARNING

■ **The operator must be familiar with all safety rules and safety decals before installing and running the shredder. All personnel must be familiar with and stay out of the hazard area whenever the shredder is running. (See Figure 17, page 22).**

Smooth, acceptable vibration levels can be easily estimated in the field. After machine shutdown and coast down has been completed, place a quarter on a clean top panel of the shredder. At full rotor rpm (while maintaining all safety rules regarding safe distances from rotating equipment) observe the quarter. If the quarter stays still and does not bounce around, the operator can estimate that the shredder is free from excessive vibration. If the quarter jumps around during full rotor rpm, the shredder may be operating with excessive vibration where troubleshooting and maintenance are required (refer to the Troubleshooting section).

The Woods Center Drive Flail Shredder has been designed for maximum durability when shredding any type of crop. While operating in the field, many factors can affect and degrade shredder rotor balance and cause increased vibration levels.

- Operating too low to the ground or in frequent contact with the ground can cause the flail knives to wear unevenly. This can reduce their chopping effect and also increase vibration levels.
- Hitting large rocks or other foreign objects can damage knives and other rotor parts, causing excessive vibration.
- Over time, certain types of soil and crops can also lead to uneven knife wear and increased vibration levels.
- Once field operation has been started, it is the operator's responsibility to check and maintain shredder rotor balance.
- If knife replacement is required due to wear or damage, refer to REPLACING FLAILS, page 31.
- Throughout the life of the flail shredder, removing the flail tubes for replacement or re-balance may be necessary.
- If flail tube replacement is required due to wear or damage, refer to SERVICING ROTORS (FLAIL TUBES), page 32.
- Any re-balance should be done with all knives installed.
- Factory balanced repair rotors are available through your local Woods dealer.
- Consult with your local balance shop experts or contact Woods Technical Service for re-balance or replacement options.

Continued operation with excessive vibration can cause damage to and shorten component life, void product warranty, and affect personal safety. Checking and maintaining shredder rotor balance is the owner/operator's responsibility.

GENERAL INFORMATION

The purpose of this manual is to assist you in operating and maintaining your flail shredder. Read it carefully. It furnishes information and instructions that will help you achieve years of dependable performance. These instructions have been compiled from extensive field experience and engineering data. Some information may be general in nature due to unknown and varying operating conditions. However, through experience and these instructions, you should be able to develop procedures suitable to your particular situation.

The illustrations and data used in this manual were current at the time of printing but, due to possible inline production changes, your machine may vary slightly in detail. We reserve the right to redesign and change the machines as may be necessary without notification.

Throughout this manual, references are made to right and left directions. These are determined by standing behind the equipment facing the direction of forward travel.

SAFETY RULES

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

Safety is a primary concern in the design and manufacture of our products. Unfortunately, our efforts to provide safe equipment can be wiped out by an operator's single careless act.

In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, judgement, and proper training of personnel involved in the operation, transport, maintenance and storage of equipment.

It has been said "The best safety device is an informed, careful operator." We ask you to be that kind of operator.

TRAINING

■ **Safety instructions are important! Read all attachment and power unit manuals; follow all safety rules and safety decal information. (Replacement manuals and safety decals are available from your dealer. To locate your nearest dealer, check the Dealer Locator at www.WoodsEquipment.com, or in the United States and Canada call 1-800-319-6637.) Failure to follow instructions or safety rules can result in serious injury or death.**

■ **If you do not understand any part of this manual and need assistance, see your dealer.**

■ **Know your controls and how to stop engine and attachment quickly in an emergency.**

■ **Operators must be instructed in and be capable of the safe operation of the equipment, its attachments, and all controls. Do not allow anyone to operate this equipment without proper instructions.**

■ **Keep hands and body away from pressurized lines. Use paper or cardboard, not hands or other body parts to check for leaks. Wear safety goggles. Hydraulic fluid under pressure can easily penetrate skin and will cause serious injury or death.**

■ **Make sure that all operating and service personnel know that if hydraulic fluid penetrates skin, it must be surgically removed as soon as possible by a doctor familiar with this form of injury or gangrene, serious injury, or death will result. CONTACT A PHYSICIAN IMMEDIATELY IF FLUID ENTERS SKIN OR EYES. DO NOT DELAY.**

■ **Never allow children or untrained persons to operate equipment.**

PREPARATION

■ **Use a suitable lifting device of sufficient capacity. Use adequate personnel to handle heavy components.**

■ **Check that all hardware is properly installed. Always tighten to torque chart specifications unless instructed otherwise in this manual.**

■ **Air in hydraulic systems can cause erratic operation and allows loads or equipment components to drop unexpectedly. When connecting equipment or hoses or performing any hydraulic maintenance, purge any air in hydraulic system by operating all hydraulic functions several times. Do this before putting into service or allowing anyone to approach the equipment.**

■ **Make sure all hydraulic hoses, fittings, and valves are in good condition and not leaking before starting power unit or using equipment. Check and route hoses carefully to prevent damage. Hoses must not be twisted, bent sharply, kinked, frayed, pinched, or come into contact with any moving parts. Operate moveable components through full operational range to check clearances. Replace any damaged hoses immediately.**

■ **Always wear relatively tight and belted clothing to avoid getting caught in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.**

■ **Make sure attachment is properly secured, adjusted, and in good operating condition.**

■ **Make sure spring-activated locking pin or collar slides freely and is seated firmly in tractor PTO spline groove.**

■ **Before starting power unit, check all equipment driveline guards for damage. Replace any damaged guards. Make sure all guards rotate freely on all drivelines. If guards do not rotate freely on drivelines, repair and replace bearings before putting equipment into service.**

■ **Power unit must be equipped with ROPS or ROPS cab and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS system in "locked up" position at all times.**

■ **Connect PTO driveline directly to power unit PTO shaft. Never use adapter sleeves or adapter shafts. Adapters can cause driveline failures due to incorrect spline or incorrect operating length and can result in personal injury or death.**

SAFETY RULES

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

■ **Inspect rubber flaps and swing rod before each use. Replace if damaged or missing. Flaps must pivot and hang freely so there are no gaps. Do not put equipment into service until repaired.**

■ **Remove accumulated debris from this equipment, power unit, and engine to avoid fire hazard.**

■ **Make sure all safety decals are installed. Replace if damaged. (See Safety Decals section for location.)**

■ **Make sure shields and guards are properly installed and in good condition. Replace if damaged.**

■ **A minimum 20% of tractor and equipment weight must be on the tractor front wheels when attachments are in transport position. Without this weight, front tractor wheels could raise up resulting in loss of steering. The weight may be attained with front wheel weights, ballast in tires or front tractor weights. Weigh the tractor and equipment. Do not estimate.**

■ **Inspect and clear area of stones, branches, or other hard objects that might be thrown, causing injury or damage.**

TRANSPORTATION

■ **Power unit must be equipped with ROPS or ROPS cab and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS system in "locked up" position at all times.**

■ **Always sit in power unit seat when operating controls or starting engine. Securely fasten seat belt, place transmission in neutral, engage brake, and ensure all other controls are disengaged before starting power unit engine.**

■ **Always raise unit and install transport locks before transporting. Leak down or failure of mechanical or hydraulic system can cause equipment to drop.**

■ **Always attach safety chain to tractor drawbar when transporting unit.**

OPERATION

■ **Do not allow bystanders in the area when operating, attaching, removing, assembling, or servicing equipment.**

■ **Keep bystanders away from equipment.**

■ **Do not operate or transport equipment while under the influence of alcohol or drugs.**

■ **Operate only in daylight or good artificial light.**

■ **Keep hands, feet, hair, and clothing away from equipment while engine is running. Stay clear of all moving parts.**

■ **Always comply with all state and local lighting and marking requirements.**

■ **Never allow riders on power unit or attachment.**

■ **Power unit must be equipped with ROPS or ROPS cab and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS system in "locked up" position at all times.**

■ **Always sit in power unit seat when operating controls or starting engine. Securely fasten seat belt, place transmission in neutral, engage brake, and ensure all other controls are disengaged before starting power unit engine.**

■ **Operate tractor PTO at the rpm speed stated in "Specifications" section.**

(Safety Rules continued on next page)

SAFETY RULES

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

(Safety Rules continued from previous page)

■ **Look down and to the rear and make sure area is clear before operating in reverse.**

■ **Do not operate or transport on steep slopes.**

■ **Do not stop, start, or change directions suddenly on slopes.**

■ **Use extreme care and reduce ground speed on slopes and rough terrain.**

■ **Watch for hidden hazards on the terrain during operation.**

■ **Stop power unit and equipment immediately upon striking an obstruction. Turn off engine, remove key, inspect, and repair any damage before resuming operation.**

■ **Leak down or failure of mechanical or hydraulic system can cause equipment to drop.**

MAINTENANCE

■ **Before dismounting power unit or performing any service or maintenance, follow these steps: disengage power to equipment, lower the 3-point hitch and all raised components to the ground, operate valve levers to release any hydraulic pressure, set parking brake, stop engine, remove key, and unfasten seat belt.**

■ **Before performing any service or maintenance, lower equipment to ground or block securely, turn off engine, remove key, and disconnect driveline from tractor PTO.**

■ **Before working underneath, read manual instructions, securely block up, and check stability. Secure blocking prevents equipment from dropping due to hydraulic leak down, hydraulic system failure, or mechanical component failure.**

■ **Work not covered in SERVICE & MAINTENANCE must be done by a qualified dealership. Special skills, tools, and safety procedures may be required. Failure to follow these instructions can result in serious injury or death.**

■ **Do not modify or alter or permit anyone else to modify or alter the equipment or any of its components in any way.**

■ **Your dealer can supply original equipment hydraulic accessories and repair parts. Substitute parts may not meet original equipment specifications and may be dangerous.**

■ **Use a suitable lifting device of sufficient capacity. Use adequate personnel to handle heavy components.**

■ **Always wear relatively tight and belted clothing to avoid getting caught in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.**

■ **Do not allow bystanders in the area when operating, attaching, removing, assembling, or servicing equipment.**

■ **Never go underneath equipment (lowered to the ground or raised) unless it is properly blocked and secured. Never place any part of the body underneath equipment or between moveable parts even when the engine has been turned off. Hydraulic system leak down, hydraulic system failures, mechanical failures, or movement of control levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death. Follow Operator's Manual instructions for working underneath and blocking requirements or have work done by a qualified dealer.**

■ **Make sure attachment is properly secured, adjusted, and in good operating condition.**

■ **Keep all persons away from operator control area while performing adjustments, service, or maintenance.**

■ **Make certain all movement of equipment components has stopped before approaching for service.**

■ **Air in hydraulic systems can cause erratic operation and allows loads or equipment components to drop unexpectedly. When connecting equipment or hoses or performing any hydraulic maintenance, purge any air in hydraulic system by operating all hydraulic functions several times. Do this before putting into service or allowing anyone to approach the equipment.**

■ **Do not handle knives with bare hands. Careless or improper handling may result in serious injury.**

■ **Your dealer can supply genuine replacement knives. Substitute knives may not meet original equipment specifications and may be dangerous.**

■ **Tighten all bolts, nuts, and screws to torque chart specifications. Check that all cotter pins are installed securely to ensure equipment is in a safe condition before putting unit into service.**

SAFETY RULES

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

■ **Make sure all safety decals are installed. Replace if damaged. (See Safety Decals section for location.)**

■ **Make sure shields and guards are properly installed and in good condition. Replace if damaged.**

■ **Do not disconnect hydraulic lines until engine is stopped, power unit is properly secured, equipment and all components are lowered to the ground, and system pressure is released by operating all valve control levers.**

■ **Leak down or failure of mechanical or hydraulic system can cause equipment to drop.**

STORAGE

■ **Block equipment securely for storage.**

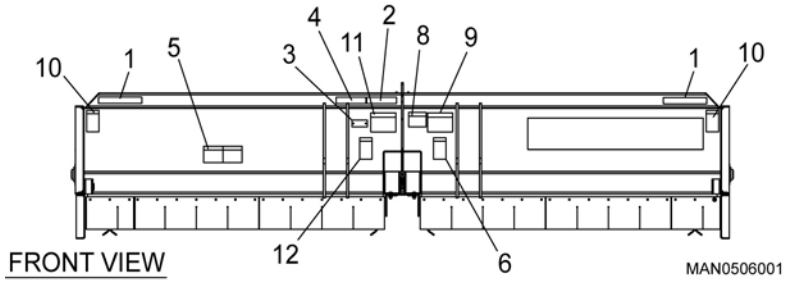
■ **Keep children and bystanders away from storage area.**

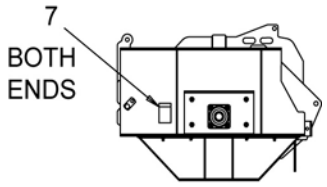
■ **Follow manual instructions for storage.**

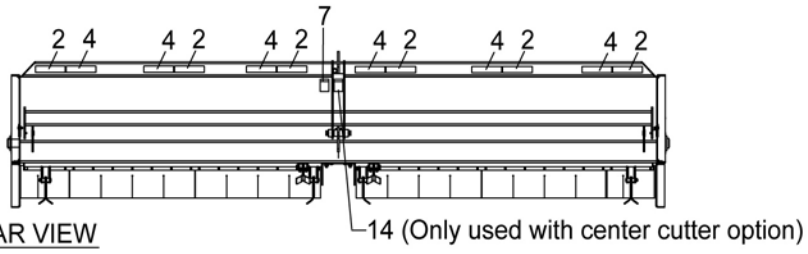
SAFETY & INSTRUCTIONAL DECALS

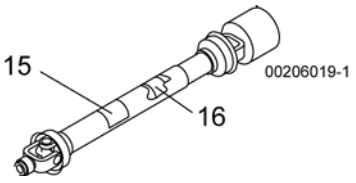
ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

Replace Immediately If Damaged!









1 - YELLOW REFLECTOR PN 20034004

2 - RED REFLECTOR PN 57123

4 - RED-ORANGE FLUORESCENT MATERIAL PN 20034034

3 - SERIAL NUMBER DECAL

5 - PN 50030977

⚠ CAUTION	⚠ PRECAUCION
1. Read Operator's Manual before starting.	1. Lea el Manual del Operario antes de empezar.
2. Stop tractor engine, place all controls in neutral, lower machine to the ground, set park brake, remove ignition key, and wait for all moving parts to stop before servicing, adjusting, repairing, or unplugging.	2. Pare el motor del tractor, ponga todos los controles en neutro, baje la máquina hasta el suelo, ponga el freno de estacionamiento, quite la llave del encendido, y espere a que todas las pizas móviles hayan parado antes de dar servicio, hacer ajustes, reparaciones, o de desatascar.
3. Keep all guards and access doors closed and secured before operating.	3. Mantenga cerrados y asegurados todos los protectores y las compuertas antes de poner a funcionar la máquina.
4. Keep hands, feet, hair, and clothing away from moving parts.	4. Mantenga retirados de las piezas móviles, las manos, los pies, el pelo, y la ropa.
5. Do not allow riders.	5. No permita que nadie vaya con usted en la máquina.
6. Do not enter rotor area when engine is running.	6. No entre en el área del rotor mientras el motor está en marcha.
7. Never exceed 20 MPH when transporting.	7. Nunca exceda 32 km/h (20 MPH) al transportar.
8. Use hazard flashers when transporting.	8. Use luces intermitentes de aviso cuando viaja con la máquina.
9. Use drawbar pin with retainer and attach safety chain.	9. Use el pasador de la barra de tiro con fiador y enganche la cadena de seguridad.
10. Wear appropriate hearing protection for prolonged exposure to excessive noise.	10. Use un protector apropiado para los oidos cuando esté expuesto a ruido excesivo por un tiempo prolongado.
11. Review safety information periodically prior to use.	11. Repase la información de seguridad periódicamente antes del uso.
	50030977-B

SAFETY & INSTRUCTIONAL DECALS

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

Replace Immediately If Damaged!

⚠ DANGER
⚠ PELIGRO

ROTATING DRIVELINE HAZARD

To prevent serious injury or death from rotating driveline:

1. **Keep all guards in place when operating.**
2. **Operate only at 1000 RPM.**
3. **Keep hands, feet, clothing, and hair away from moving parts.**

PELIGRO CON EL MOVIMIENTO ROTATIVO DEL EJE MOTRIZ

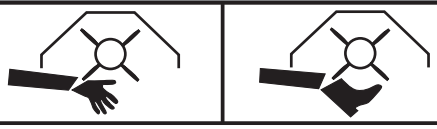
Para evitar heridas graves o la muerte a causa de la rotación del eje motriz:

1. **Mantenga todos los protectores en su puesto mientras esté funcionando la máquina.**
2. **Hágala funcionar únicamente a 1000 RPM.**
3. **Mantenga retirados de las piezas móviles, las manos, los pies, la ropa y el pelo.**

50030978-A

6 - PN 50030978

⚠ DANGER
⚠ PELIGRO



ROTATING FLAIL HAZARD

To prevent serious injury or death from rotating flails:

1. **Stop engine, remove ignition key, and wait for moving parts to stop before servicing.**
2. **Keep hands and feet away from flails when engine is running.**
3. **Keep other people away.**

PELIGRO CON LAS CUCHILLAS CORTADORAS ROTATIVAS

Para evitar heridas graves o la muerte causadas por las cuchillas rotativas:

1. **Pare el motor, quite la llave del encendido y espere hasta que las piezas móviles hayan parado antes de dar servicio.**
2. **Mantenga las manos y los pies retirados de las cuchillas estando el motor en marcha.**
3. **No permita que otra gente se acerque.**

50030982-A

7 - PN 50030982

NOTICE:
THREE POINT MOUNTED UNITS

LOAD SENSING ADJUSTMENT

Many tractors are equipped with a load sensing feature on the 3 point hitch which can be adjusted to allow the 3 point shredder to "float" in the operating position. Adjust this feature on your tractor (if so equipped) such that the rear tires on shredder carry only minimal weight. This load sensing adjustment is critical if your fields are uneven or if drainage ditches are to be crossed with shredder operating.

8 - PN 50530138

⚠ WARNING
⚠ ADVERTENCIA

THROWN OBJECT HAZARD

To prevent serious injury or death:

1. **Stay away from the front of machine when operating.**
2. **Keep others away.**
3. **Keep deflectors in good condition when operating.**

PELIGRO DE OBJETOS ARROJADOS POR LA MAQUINA

Para evitar heridas graves o la muerte:

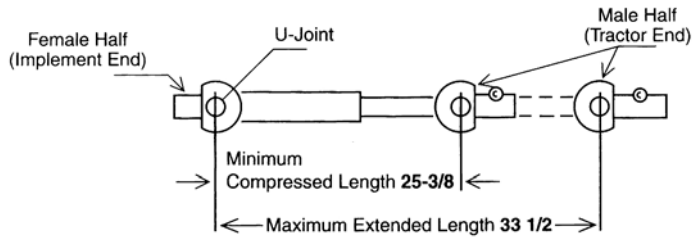
1. **Manténgase retirado del frente de la máquina cuando esta está en marcha.**
2. **No permita que otra gente se acerque.**
3. **Mantenga los deflectores en buenas condiciones cuando utilice la máquina.**

505-3-0314

10 - PN 50530314

NOTICE

INSTALLING FLAIL SHREDDER P.T.O. – 3 POINT UNITS



After connecting the shredder to the tractor, the P.T.O. needs to be checked for proper length. This can be done by raising and lowering the machine. Never allow the P.T.O. shaft to telescope completely together or damage may occur. To shorten the P.T.O. shaft, cut off male spline and shielding equal amounts. **NOTE:** Cut off male end only, never cut female end. Cut only enough splined shaft and shielding off to prevent bottoming out. Never cut more than 6 inches maximum off male end. Cutting of male half 1 inch shortens both minimum and maximum lengths by 1 inch.

9 - PN 50530225

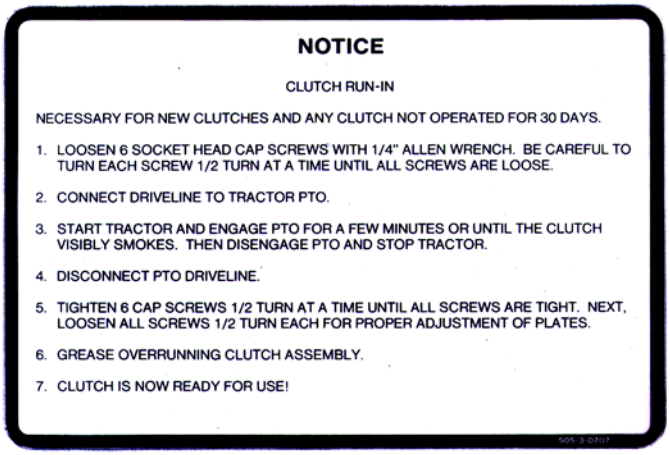
(Safety Decals continued on next page)

SAFETY & INSTRUCTIONAL DECALS

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

Replace Immediately If Damaged!

(Safety Decals continued from previous page)


NOTICE
CLUTCH RUN-IN
NECESSARY FOR NEW CLUTCHES AND ANY CLUTCH NOT OPERATED FOR 30 DAYS.
1. LOOSEN 6 SOCKET HEAD CAP SCREWS WITH 1/4" ALLEN WRENCH. BE CAREFUL TO TURN EACH SCREW 1/2 TURN AT A TIME UNTIL ALL SCREWS ARE LOOSE.
2. CONNECT DRIVELINE TO TRACTOR PTO.
3. START TRACTOR AND ENGAGE PTO FOR A FEW MINUTES OR UNTIL THE CLUTCH VISIBLY SMOKES. THEN DISENGAGE PTO AND STOP TRACTOR.
4. DISCONNECT PTO DRIVELINE.
5. TIGHTEN 6 CAP SCREWS 1/2 TURN AT A TIME UNTIL ALL SCREWS ARE TIGHT. NEXT, LOOSEN ALL SCREWS 1/2 TURN EACH FOR PROPER ADJUSTMENT OF PLATES.
6. GREASE OVERRUNNING CLUTCH ASSEMBLY.
7. CLUTCH IS NOW READY FOR USE!

11 - PN 50530707

ATTENTION !!
Slip clutch maintenance is a must to protect the driveline and other major components of your machine.
It is important that the clutches slip when an obstacle or load heavier than the clutch setting is encountered. Before using your New shredder for the first time and before each shredding season, the clutch must be slipped to insure that the clutch has not become frozen. Read your instruction in your parts manual for the proper method to follow to slip your clutches.
NOTE:failure to follow the instructions listed in your manual may result in immediate breakage of some of your drive components on your shredder.
505-3-0728

12 - PN 50530728

WARNING
ADVERTENCIA
HIGH-PRESSURE FLUID HAZARD
To prevent serious injury or death:
1. Relieve pressure on system before repairing, adjusting, or disconnecting.
2. Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands.
3. Keep all components in good repair.
PELIGRO DE FLUIDO BAJO ALTA PRESION
Para evitar heridas graves o la muerte:
1. Alivie la presión del sistema antes de hacer repara ciones, ajustes o desconecciones.
2. Use protección apropiada en las manos y en los ojos, cuando revise para ver si hay fugas. Utilice una tabla o un cartón en vez de las manos.
3. Mantenga todos los componentes en buen estado.
50530315-A

14 - PN 50530315

15 - PN 18864

DANGER
ROTATING DRIVELINE
CONTACT CAN CAUSE DEATH
KEEP AWAY!
DO NOT OPERATE WITHOUT -
All driveline guards, tractor and equipment shields in place
Drivelines securely attached at both ends
Driveline guards that turn freely on driveline
18864-C

16 - PN 33347

BE CAREFUL!

Use a clean, damp cloth to clean safety decals.

Avoid spraying too close to decals when using a pressure washer; high-pressure water can enter through very small scratches or under edges of decals causing them to peel or come off.

Replacement safety decals can be ordered free from your Woods dealer. To locate your nearest dealer, check the Dealer Locator at www.WoodsEquipment.com, or in the United States and Canada call 1-800-319-6637.

OPERATOR SIGN-OFF RECORD

Woods Equipment Company follows the general safety standards specified by the American Society of Agricultural and Biological Engineers (ASABE) and the Occupational Safety and Health Administration (OSHA) for agricultural equipment.

Anyone who will be operating and/or maintaining the flail shredder must read and clearly understand all Safety, Operating, and Service & Maintenance information presented in this manual.

Do not operate or allow anyone else to operate this equipment until this information has been reviewed. Review this information annually, before the season start-up. Make periodic reviews of the Safety and Operation sections standard practice for those using any of your equipment.

Use the following Operator Sign-off Record to verify that each operator has read and understood the information in this manual and has been instructed in the safe operation of the flail shredder.

DATE	OPERATOR'S NAME (PRINT)	OPERATOR'S SIGNATURE

OPERATION

The Woods Flail Shredder is designed to pick up and shred crop and plant residue left in the field. Rotational power to the flails is provided by the tractor PTO.

Be familiar with the flail shredder before starting.

The owner is responsible for training operators in the safe operation of the flail shredder.

⚠ WARNING

■ Safety instructions are important! Read all attachment and power unit manuals; follow all safety rules and safety decal information. (Replacement manuals and safety decals are available from your dealer. To locate your nearest dealer, check the Dealer Locator at www.WoodsEquipment.com, or in the United States and Canada call 1-800-319-6637.) Failure to follow instructions or safety rules can result in serious injury or death.

■ Never allow children or untrained persons to operate equipment.

■ Make sure shields and guards are properly installed and in good condition. Replace if damaged.

■ Keep hands, feet, hair, and clothing away from equipment while engine is running. Stay clear of all moving parts.

■ Never allow riders on power unit or attachment.

■ Before dismounting power unit or performing any service or maintenance, follow these steps: disengage power to equipment, lower the 3-point hitch and all raised components to the ground, operate valve levers to release any hydraulic pressure, set parking brake, stop engine, remove key, and unfasten seat belt.

■ Do not allow bystanders in the area when operating, attaching, removing, assembling, or servicing equipment.

■ Keep bystanders away from equipment.

■ Operate tractor PTO at the rpm speed stated in "Specifications" section.

⚠ CAUTION

■ Always sit in power unit seat when operating controls or starting engine. Securely fasten seat belt, place transmission in neutral, engage brake, and ensure all other controls are disengaged before starting power unit engine.

⚠ CAUTION

■ Always comply with all state and local lighting and marking requirements.

■ Always wear relatively tight and belted clothing to avoid getting caught in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.

PRINCIPAL COMPONENTS

The Woods Flail Shredder consists of a large rotating tube with swinging steel flails attached. The flails pick up or strike crop residue or trash and shred it. Rotational power to the drum is provided by the tractor PTO through a gearbox in the center of the machine.

For removing the center strip of crop residue, an optional hydraulically driven blade can be installed under the cover in the center of the machine.

The flail shredder is designed to be used as a pull-type, semi-mounted, or 3-point mounted machine.

BREAK-IN OF THE FLAIL SHREDDER

The following should be observed when operating the unit for the first time:

After operating for 1/2 hour

1. Check all nuts, bolts, and other fasteners. Tighten to specifications given in the Bolt Torque Chart, page 68.
2. Tighten wheel bolts to specifications given in the Bolt Torque Chart, page 68.
3. Check that the flails are in good condition and swing freely.
4. Check oil level in the gearbox. Add oil if needed.
5. Check that the PTO driveline shield turns freely.
6. Lubricate all grease points.

After operating for 5 to 10 hours

1. Repeat Steps 1 through 5 above.
2. Follow regular service schedule as outlined in Lubrication Schedule, page 25.

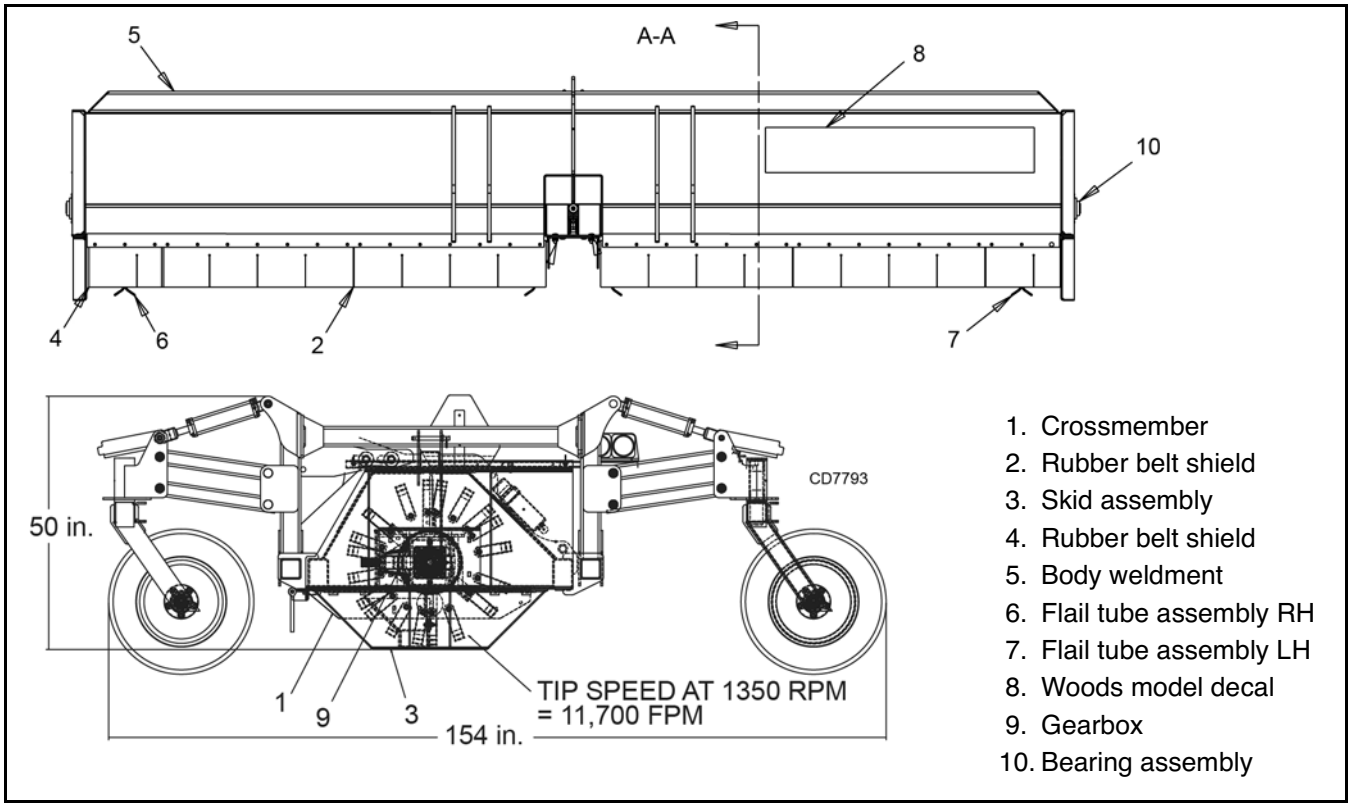


Figure 1. Flail Shredder Principal Components

PRE-OPERATION CHECK LIST

(OWNER'S RESPONSIBILITY)

NOTICE

■ **This Pre-Operation Check List is provided for the operator. It is important to follow for both personal safety and maintenance of the flail shredder.**

___ Check all lubrication points and grease as instructed in Lubrication Service Record, page 28.

___ Use only a tractor of adequate power and weight to pull the unit. (See chart on page 16.)

___ Check that the unit is properly attached to the tractor. On pull-type unit, be sure there is a mechanical retainer through the drawbar pin and the safety chain is installed. On 3-point hitch units, be sure retainers are used on the mounting pins.

___ Check oil level in gearbox. Add oil as required.

___ Check that the PTO driveline turns freely and that the driveline can telescope easily.

___ Check tire pressure. Inflate to specified level.

___ Check flails. Inspect for damage or breakage. Make sure they swing freely on their mount. Repair or replace as required.

___ Check condition of cutter blade (if so equipped).

___ Inspect all hydraulic lines, hoses, couplers, and fittings. Tighten, repair, or replace any leaking or damaged components.

___ Install and secure all guards, doors, and covers.

___ Check PTO clutch operation (See Weasler Automatic Clutch (24K) or (30K), page 34).

CHOOSING THE CORRECT TRACTOR

To ensure safe and reliable operation of the flail shredder, use a tractor with the correct specifications. Use the following guidelines to select the correct tractor.

1. Horsepower

Use Table 1 on page 16 for selecting the tractor horsepower class appropriate for your unit's width.

Increase the horsepower level by 25 percent when operating in hilly, soft, or wet conditions.

2. Tractor Weight

By following recommendations for tractor horsepower, the tractor will have sufficient weight to provide stability for unit during field operation or when transporting.

When using a 3-point mounted shredder, we recommend that each tractor be equipped with a full complement of suitcase weights on the tractor front (see Figure 2 for example). This will provide the required front weight for turning and extra traction if equipped with front wheel assist.

Table 1: Tractor Horsepower (6-8) vs. Unit Width

Width	Minimum Horsepower
20′	120
22′	132
25′	150
27′	162
30′	180

Figure 2. Tractor Front Weight

3. 3-Point Hitch

The 3-point hitch models require that the tractor be equipped with a Category II or Category III 3-point hitch. If the hitch can be converted from one to the other, use a Category III to provide a wider stance and more stability.

Use the upper top link hole for Category III and the lower hole for Category II as shown in Figure 3.

For easier attachment, use a quick hitch. If not using a quick hitch, use optional hitch extension.

4. Hydraulic Requirements when Using Center Cutter Options

The tractor hydraulic system must be capable of 8 gpm (30 lpm) at 1500 psi (10,335 kPa). **The system cannot exceed 28 gpm or 3000 psi.** Either closed-centered or open-centered systems can be used.

5. Load Sensing Hydraulics (3-Point Models Only)

Many newer tractors are equipped with “load sensing” hydraulics. The operator is responsible for setting the tractor hydraulic system to provide “float” on the 3-point hitch. Refer to the tractor manual for specific instructions.

The “float” feature will allow the unit to follow the ground contours during operation. This applies to 3-point mounted machines only.

6. Drawbar (Pull-Type Models Only)

The tractor drawbar must be set to provide 20” (508 mm), between the end of the PTO shaft and the center of the drawbar pin for 1-3/4 - 20, 1000 RPM drives. See Figure 4. This dimension will provide the required clearance for the CV (Constant Velocity) joint on the front of the driveline.

NOTE: On Pull-Type models, do not cut driveline.

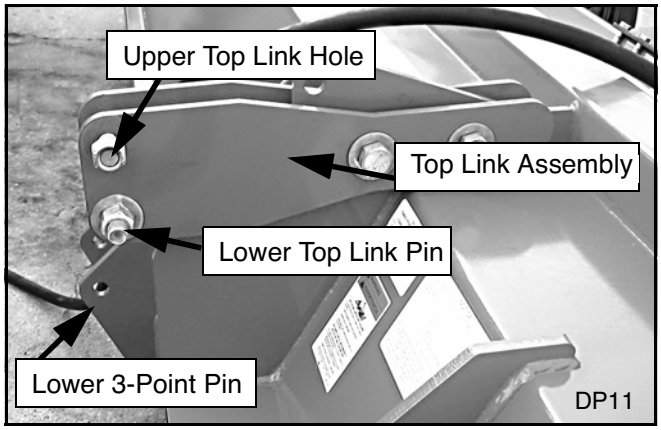


Figure 3. 3-Point Hitch Attachment

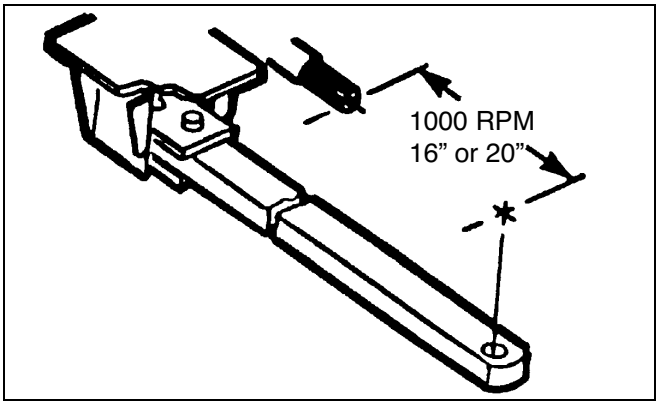


Figure 4. Drawbar Dimension

PTO DRIVELINE LENGTH

(3-Point & 2-point Models Only)

■ **The unit is equipped with a PTO driveline long enough to fit any tractor and 3-point linkage system.**

■ **The operator is responsible for measuring the dimensions of the driveline through its working range. These dimensions will indicate if the driveline requires shorting to operate on the particular tractor/unit attachment system. The operator must check dimensions before using the unit for the first time and each time a different tractor is used with the unit.**

■ **Use the following procedure when determining driveline dimension:**

⚠ WARNING

■ **Keep bystanders away from equipment.**

1. Clear the area of all bystanders.
2. Attach the 3-point hitch to the unit but not the PTO driveline.
3. Raise the unit until the tractor PTO and gearbox shafts are the same height.
4. Measure the dimension between the shaft grooves on the tractor and implement ends. If this dimension is less than 34.81 inches, the shaft will require shortening.
5. Move the unit to its highest and lowest working position and measure this dimension again. [The unit's shaft can telescope (see Figure 6) before it has been shortened.]
6. If required, shorten the shaft to prevent bottoming out during use. **NOTE:** An extra inch of compression space in the shaft can eliminate bottoming out during use. Measure to make sure.
7. Use an abrasive wheel power saw to cut the male end of the shaft. Cut the same amount from both the splined shaft and the safety shield. See Figure 5. Use a file to remove any burrs from the cut end.

NOTICE

■ **Cut only the male end. Never cut the female end.**

8. Never cut more than 9 inches from the male end. Cutting 1 inch from the male end shortens both the minimum and maximum lengths by 1 inch.

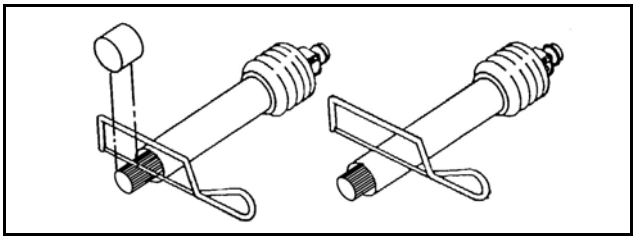


Figure 5. Cutting the Driveline Shaft

ATTACHING SHREDDER TO TRACTOR

1. Place unit on a level, dry area free of debris and other foreign object.

⚠ WARNING

■ **Keep bystanders away from equipment.**

■ **Connect PTO driveline directly to power unit PTO shaft. Never use adapter sleeves or adapter shafts. Adapters can cause driveline failures due to incorrect spline or incorrect operating length and can result in personal injury or death.**

2. Clear the area of bystanders, especially children.
3. Provide enough clearance to back the tractor safely into the unit.

⚠ CAUTION

■ **Do not allow anyone to stand between tractor and unit when backing up to the unit.**

With Quick Hitch Attachment:

4. Set the height of the 3-point hitch so that quick hitch claws are lower than the mounting pins.
5. Make sure 3-point hitch is set in the non-sway position. See tractor manual for details.
6. Align the claws under the lower and upper mast mounting pins while backing up.

   NOTE: For a Category II hitch, use the bottom upper mast hole. For a Category III hitch, use the top upper mast hole.
7. When the claws are under the pins, slowly raise the 3-point hitch. Make sure each mounting pin seats in its respective claw.
8. Release the claw retainer locks to secure the mounting pins in the claws.
9. Check the top link frame. It should be free to slide in its mounting slots. This movement allows the unit to follow the ground contour when cresting a hill or going through a depression.

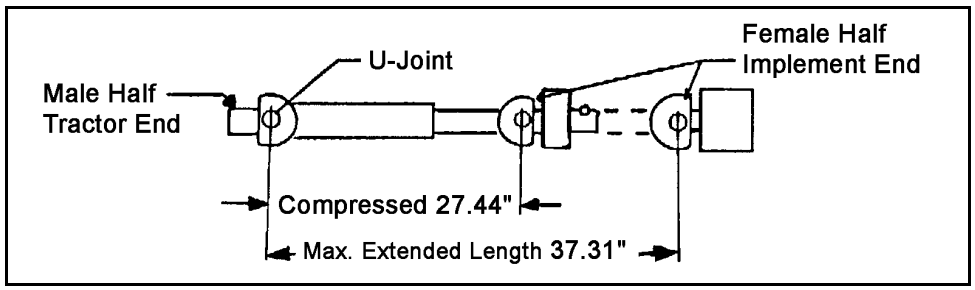


Figure 6. Driveline Dimension

Without Quick Hitch Attachment:

10. Back tractor lower 3-point arms between lower mast plates and align with lower 3-point hole.

11. Place 1-3/4 OD spacer through 3-point arm pivot (both sides).

12. Push tractor's 3-point arm to the inside and slide a 1-7/16 OD spacer between to take up the empty space. Secure with lower 3-point hitch pin assembly, 1-3/4 OD spacer, and 7/16 x 2 klik pin.

13. Repeat steps 5 and 6 for other side.

14. Lower the tractor's top link arm and secure in top hole of upper mast assembly using spacer, hex bolt, and lock nut.

Pull-Type Model:

1. Check and set the drawbar dimension.

2. Back the tractor up to the hitch.

3. Use a hardened drawbar pin that provides for a mechanical retainer, such as a Klik pin.

4. Attach safety chain from hammer strap around the drawbar or cage to prevent unexpected separation. Provide sufficient slack for turning.

5. make sure the drawbar is pinned in its center position.

Figure 7. Attaching to Pull-Type Model

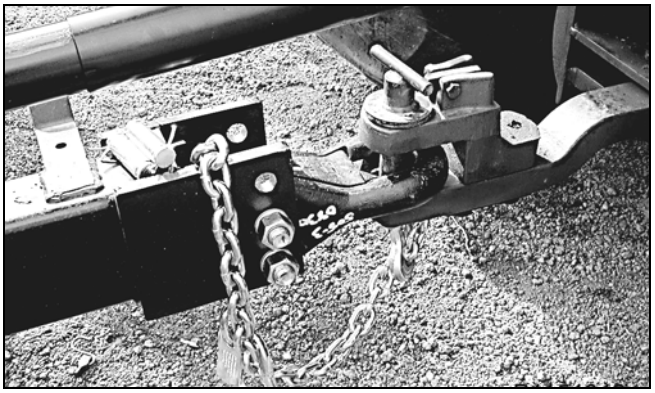


Figure 8. Drawbar & Safety Chain

Attach PTO Driveline

1. Make sure the driveline telescopes easily and shields rotate freely.

NOTICE

■ **The drawbar may need repositioning to provide clearance for the driveline.**

2. Attach the driveline to the tractor by retracting the locking collar. Slide the yoke over the shaft and push on the yoke until the lock collar clicks into position. Make sure the yoke is locked into position.

Attach Hydraulics and Lift Cylinder Hose (Center Cutter Option)

1. Use a clean cloth to clean hose ends and area around the couplers on the tractor.

2. Insert the hose male ends into the tractor couplers. Make sure hoses lock in place.

3. Route hoses along or over the hitch and secure in position with clips, tape, or plastic ties. Provide enough slack for turning and lifting.

REMOVING SHREDDER FROM TRACTOR

Reverse the above procedure when removing unit from the tractor. Engage transport lock channel at the four struts prior to lowering shredder. Release pressure before removing hoses.

Figure 9. Transport Lock

FIELD OPERATION

The Woods Flail Shredder is designed with the flexibility to operate well in almost any kind of crop and terrain conditions. However, the operator is responsible for being familiar with all operating and safety procedures and following them. Each operator should review this Field Operation section at the start of the season and as often as required to be familiar with the unit.

Operators should also review the PRE-OPERATION CHECK LIST, page 15, and Attaching Shredder to Tractor, page 17.

⚠ WARNING

■ **Safety instructions are important! Read all attachment and power unit manuals; follow all safety rules and safety decal information. (Replacement manuals and safety decals are available from your dealer. To locate your nearest dealer, check the Dealer Locator at www.WoodsEquipment.com, or in the United States and Canada call 1-800-319-6637.) Failure to follow instructions or safety rules can result in serious injury or death.**

■ **Never allow children or untrained persons to operate equipment.**

■ **Make sure shields and guards are properly installed and in good condition. Replace if damaged.**

■ **Keep hands, feet, hair, and clothing away from equipment while engine is running. Stay clear of all moving parts.**

■ **Before dismounting power unit or performing any service or maintenance, follow these steps: disengage power to equipment, lower the 3-point hitch and all raised components to the ground, operate valve levers to release any hydraulic pressure, set parking brake, stop engine, remove key, and unfasten seat belt.**

■ **Never allow riders on power unit or attachment.**

■ **Do not allow bystanders in the area when operating, attaching, removing, assembling, or servicing equipment.**

■ **Inspect and clear area of stones, branches, or other hard objects that might be thrown, causing injury or damage.**

■ **Operators must be instructed in and be capable of the safe operation of the equipment, its attachments, and all controls. Do not allow anyone to operate this equipment without proper instructions.**

■ **Keep bystanders away from equipment.**

■ **Operate tractor PTO at the rpm speed stated in "Specifications" section.**

⚠ CAUTION

■ **Always sit in power unit seat when operating controls or starting engine. Securely fasten seat belt, place transmission in neutral, engage brake, and ensure all other controls are disengaged before starting power unit engine.**

■ **Always comply with all state and local lighting and marking requirements.**

■ **Always wear relatively tight and belted clothing to avoid getting caught in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.**

RUBBER FLAPS OR BELTING

All units are equipped with front shield flaps or belting along the front of the frame. The shield flaps stop or deflect trash, stones, or other debris picked up by the flails.

Be sure the shield flaps or belting are in good condition for operation. Replace if damaged, torn, or missing.

PREPARING FOR OPERATION

1. Pull into the field and position the unit in a level area.
2. Lower into operating position.
3. Set the 3-point so the quick hitch is vertical and the floating upper mast is forward.
4. Use stroke control spacer on four cylinders to set cutting height.

Flail Height

Set the unit to give a flail height of **at least 3 to 6 inches (75 to 150 mm)** above the ground. This will minimize the amount of stones and dirt picked up by the flails under all operating conditions. (See Balance Statement, page 5.)

NOTE: To avoid unnecessary wear on knives and related parts, never set the unit lower than the recommended setting. (See Balance Statement, page 5.)

SET OPERATING HEIGHT

Use stroke control spacers. The number and thickness should be equal on each cylinder to keep shredder level.

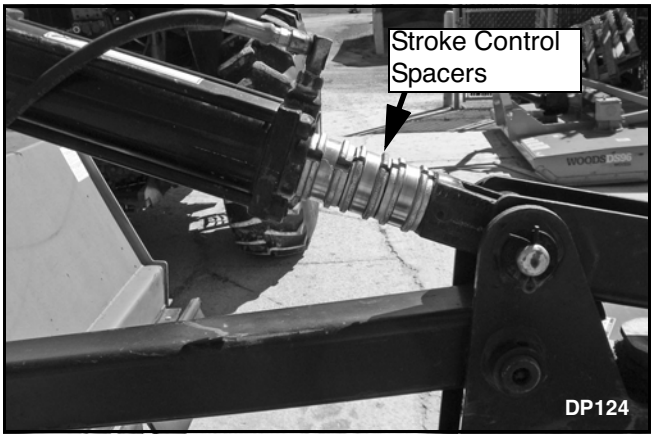


Figure 10. Setting Operating Height

On 3-Point models, be sure the floating mast is free to slide in its mounting frame to allow the machine to follow ground contours. Refer to Figure 11.

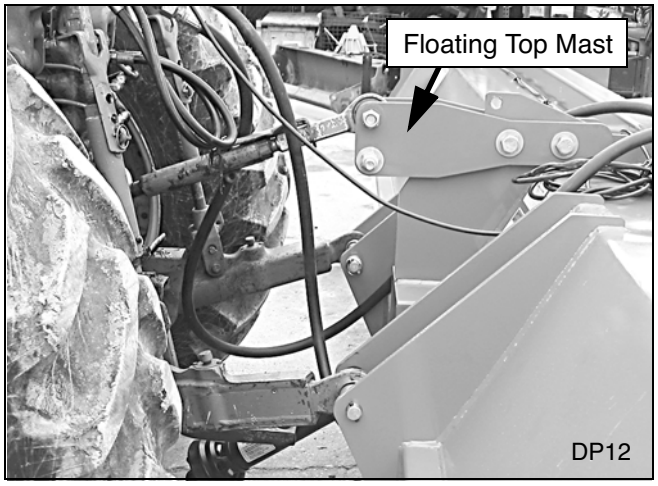


Figure 11. Free-Float Position

FLAIL KNIVES

The shredder is factory equipped with “L” or cup type flails. The two types are interchangeable.

“L” Flails

“L” flails (Figure 13) work best when trash or crop residue is standing.

Cup Flails

Cup flails (Figure 14) can pick up material from the ground and work best in matted trash conditions.

The standard cup flail is 8-1/2 inches (216 mm) long and is used for most applications. Optional 6-3/16 inch and 7-1/2 inch (157 mm and 191 mm) flails are available to match the tip position to ground contour.

Attach optional cup flails as follows, making sure that knives at 180° match (see Figure 12) (see Balance Statement, page 5):

1. Leave standard flails located between the rows.
2. Remove others and install shorter flails to follow ground contour. Be sure to mount the same size flails on opposite sides of the tube. Measure the row spacing and flail position carefully to minimize ground contact. See page 38 and page 39.

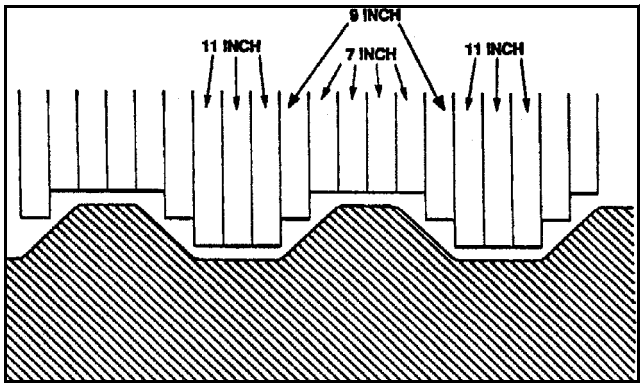


Figure 12. Optional Flail Contour

Figure 13. “L” Flails

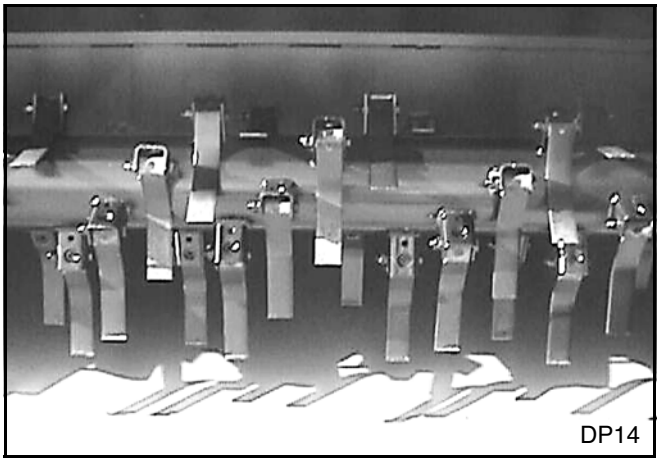


Figure 14. Cup Flails

Setting Flail Height

1. Be sure wheels are set to follow in the center of furrow row. **Set flails 3 to 6 inches (75 to 150 mm)** above the ground. (See Balance Statement, page 5.)
2. Align the unit with the working area on or between rows on flat farming.
3. Use stroke control spacers on four cylinders to set cutting height.

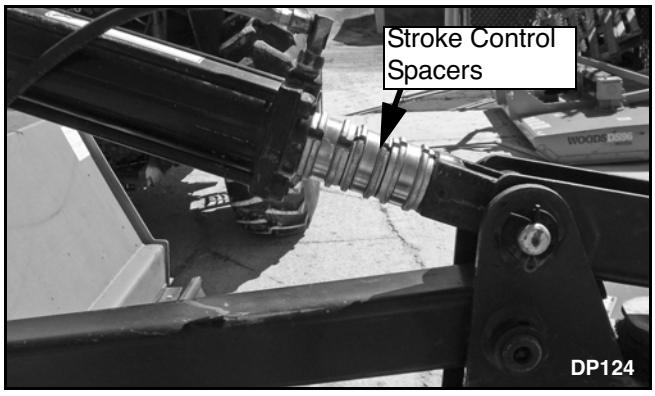


Figure 15. Setting Flail Height

Setting Caster Wheels

Normally, wheels are set to track in the row centers, between the raised seed beds. Tire position will determine flail height, but depth of furrow is also a factor in setting flail height. In some conditions the furrow between the seed beds is deeper on the ends, where irrigation waters enter the field. As furrows change depth, flail height will change.

To compensate for the depth change, move the caster wheels against the side of the outer seed bed (see Figure 16). The wheels will then tend to climb up the side of the seed bed and prevent the flails from hitting the top of the bed.

Set the flail height after the wheels have been moved against the seed bed.

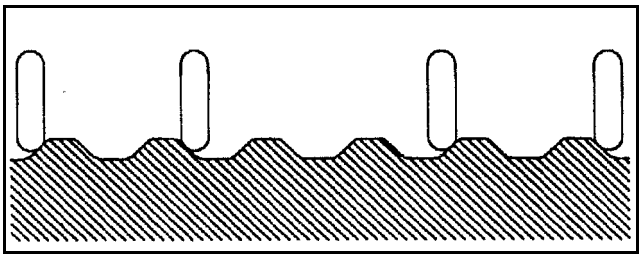


Figure 16. Wheel Position

STARTING THE SHREDDER

1. Run tractor engine at low idle.
2. Slowly engage PTO control to start the shredder.
3. Slowly bring tractor engine to rated PTO speed. Never exceed rated speed.

STOPPING THE SHREDDER

⚠ WARNING

■ **Before dismounting power unit or performing any service or maintenance, follow these steps: disengage power to equipment, lower the 3-point hitch and all raised components to the ground, operate valve levers to release any hydraulic pressure, set parking brake, stop engine, remove key, and unfasten seat belt.**

1. Slowly decrease engine speed to low idle.
2. Disengage center cutter's hydraulic system (if so equipped). Never approach unit until the blade has stopped turning.
3. Slowly disengage PTO clutch. The overrunning clutch will allow the shredder to freewheel down.
4. Restart the unit only after the drums quit turning. The PTO will not need to be disengaged to lift the unit on the ends or while turning.

HAZARD AREA

⚠ WARNING

■ **Make certain all movement of equipment components has stopped before approaching for service.**

Stay away from front, side, and rear of unit while it is running. Flails can pick up stones, sticks, wire, and other debris and throw it out with enough force to severely injure bystanders.

Keep out of shaded area shown in Figure 17.

Shut down unit and wait for moving parts to stop before approaching.

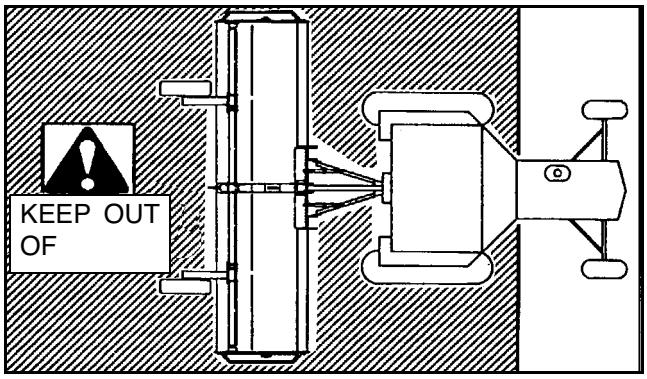


Figure 17. Hazard Area

GROUND SPEED

Travel speed can vary between 3 and 8 mph (5 and 13 kmph) depending on the bulk of residue and terrain conditions. The operator is responsible for noting the condition of the work, setting the speed to obtain a quality shredding job, and maintaining control of the unit.

Speed may be increased if shredding quality is good.

Decrease speed if trash is left standing or if some is not picked up.

TURNING

3-Point Mounted Units:

Always raise the unit slightly to lift rear wheels off the ground before turning. This will eliminate side loads on the wheel assembly, unless unit is equipped with caster wheels.

Pull-Type Units:

The front universal is equipped with a CV (Constant Velocity) joint to allow for turning. Although the CV joint allows for sharper turns than a regular driveline, it does have some limitations. Refer to Figure 19.

CV joint angle should not exceed 80 degrees in either operating or standstill condition of the driveline. Larger angles will damage the joint.

The angle should never exceed 35 degrees when the driveline is under full load.

NOTICE

■ **Disengage PTO when making sharp turns.**

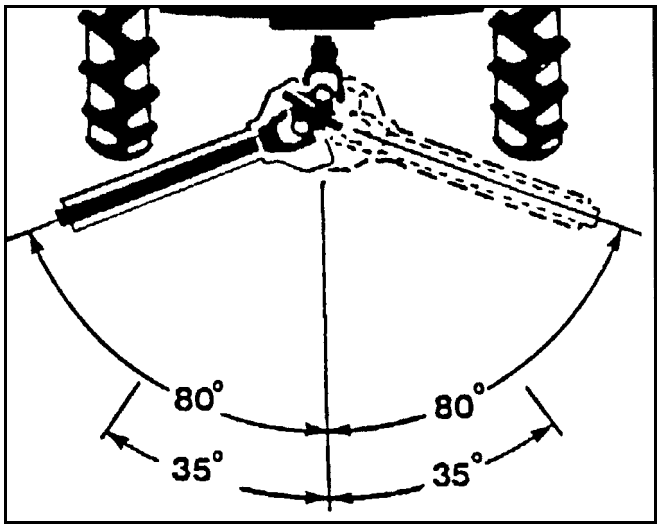


Figure 18. CV Joint Angles

CLEANING

After Each Use

- Remove large debris such as clumps of dirt, grass, crop residue, etc. from machine.
- Inspect machine and replace worn or damaged parts.
- Replace any safety decals that are missing or not readable.

Periodically or Before Extended Storage

- Clean large debris such as clumps of dirt, grass, crop residue, etc. from machine.
- Remove the remainder using a low-pressure water spray.
  1. Be careful when spraying near scratched or torn safety decals or near edges of decals as water spray can peel decal off surface.
  2. Be careful when spraying near chipped or scratched paint as water spray can lift paint.
  3. If a pressure washer is used, follow the advice of the pressure washer manufacturer.
- Inspect machine and replace worn or damaged parts.
- Sand down scratches and the edges of areas of missing paint and coat with Woods spray paint of matching color (purchase from your Woods dealer).
- Replace any safety decals that are missing or not readable (supplied free by your Woods dealer). See Safety Decals section for location drawing.

END TOW OPERATION

3-Point Mounted Models:

1. While shredder is attached to 3-point hitch on tractor user 3-point to lift all four wheels off ground. Rotate and lock two wheels on right end of shredder in end transport position as shown in Figure 19.

Figure 19. Transport Position

2. Set shredder back on all four wheels using 3-point. Raise all shredder lift cylinders to maximum lift height. Flip transport locks into transport position (see Figure 20). Lower cylinders into transport lock. Make sure all four cylinders have bottomed out.

Figure 20. Transport Lock

3. Unhook hydraulic hoses, PTO shaft, and 3-point hitch. Secure hoses and PTO shaft for end transport.

4. Move tractor from operating position to end tow position. Hook hitch to drawbar.

Figure 21. End Tow - Drawbar

5. An end tow hitch is also available as optional equipment for hooking shredder to quick hitch.

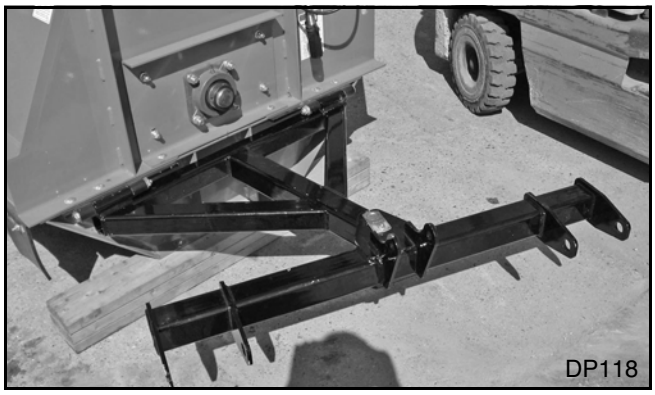


Figure 22. End Tow - Quick Hitch

6. Slide light bar out to match the widest width of shredder and pin into position. Attach light harness to tractor outlet.

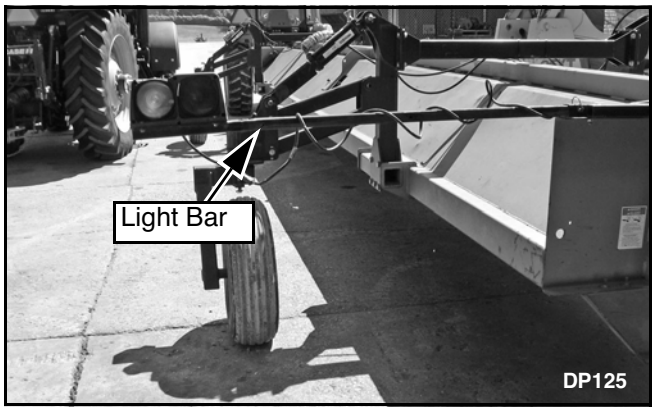


Figure 23. Light Bar

■ **Do not exceed 20 MPH while transporting shredder.**

END TOW OPERATION

Pull-Type Models

1. Raise all shredder lift cylinders to maximum lift height. Flip transport locks into position (see Figure 16). Lower cylinder on to transport lock. Make sure all cylinders have bottomed out.
2. Unhook hydraulic hose, PTO drive, and drawbar pin. Secure hoses and PTO drive for transport. Lift tongue and rotate into position on shredder body as shown in Figure 24.
3. Move tractor from operating position to end tow position. Hook hitch to drawbar. (See Figure 21).
4. Pull shredder ahead enough to rotate casters to trailing position. Lock rear casters in transport position as shown in Figure 19.
5. Slide light bar out to match width of shredder and pin in position. Attach light harness to tractor. (See Figure 23).

Figure 24. Drawbar and PTO in Transport Position

STORAGE

⚠ WARNING

- **Block equipment securely for storage.**
- **Keep children and bystanders away from storage area.**

At the end of the season, the shredder should be thoroughly inspected and prepared for storage. Repair or replace any worn or damage components to prevent unnecessary down time at the beginning of the next season.

To ensure a long, trouble-free life, prepare the unit for storage by carrying out the following procedure:

1. Clear the area of bystanders, especially children.
2. Thoroughly wash the unit, using a pressure washer to remove all dirt, mud, debris, and residue. See Cleaning instructions on page 22.
3. Inspect the flails and rotors for damage or entangled material. Remove entangled material. Repair or replace damaged parts.
4. Inspect all hydraulic hoses, lines, couplers, and fittings. Tighten all loose fittings. Replace any hose that is cut, nicked, abraded, or separating from the crimped end of a fitting.
5. Change gearbox oil.
6. Lubricate all grease fittings. Make sure all grease cavities have been filled with grease to remove any water residue from pressure washing.
7. Touch up all paint nicks and scratches to prevent rust.
8. Move to storage area. Select a dry area free of debris. Store in an area away from human activity.
9. Unhook from tractor (see Removing Shredder from Tractor, page 18).
10. Place safety stands or large blocks under the frame to take the load off the tires. **NOTE:** Do not deflate tires.
11. If the unit cannot be placed indoors, cover with a waterproof tarpaulin and tie securely. Store away from human activity.
12. Do not allow children to play on or around the stored unit.

SERVICE & MAINTENANCE

⚠ WARNING

■ **Before dismounting power unit or performing any service or maintenance, follow these steps: disengage power to equipment, lower the 3-point hitch and all raised components to the ground, operate valve levers to release any hydraulic pressure, set parking brake, stop engine, remove key, and unfasten seat belt.**

■ **Before working underneath, read manual instructions, securely block up, and check stability. Secure blocking prevents equipment from dropping due to hydraulic leak down, hydraulic system failure, or mechanical component failure.**

■ **Keep all persons away from operator control area while performing adjustments, service, or maintenance.**

■ **Do not handle blades with bare hands. Careless or improper handling may result in serious injury.**

■ **Make sure shields and guards are properly installed and in good condition. Replace if damaged.**

⚠ CAUTION

■ **Always wear relatively tight and belted clothing to avoid getting caught in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.**

■ **Make certain all movement of equipment components has stopped before approaching for service.**

LUBRICANTS

1. **Grease**
   Use an SAE multi-purpose high temperature grease with extreme pressure (EP) performance. An SAE multi-purpose lithium-based grease is also acceptable.

2. **Gearbox Oil**
   Use an SAE 85W90 gear oil for all operating conditions. Capacity: 3-1/2 U.S. quarts (110 oz.).

Storing Lubricants

Your unit can operate at top efficiency only if clean lubricants are used. Use clean containers to handle all lubricants. Store them in an area protected from dust, moisture, and other contaminants.

GREASING

NOTE: Use the Lubrication Service Record, page 28 to keep a record of all scheduled maintenance.

1. Use a hand-held grease gun for all greasing.
2. Wipe grease fitting with a clean cloth before greasing to avoid injecting dirt and grit.
3. Replace and repair broken fittings immediately.
4. If fittings will not take grease, remove and clean thoroughly. Also clean lubricant passageway. Replace fitting if necessary.

LUBRICATION SCHEDULE

NOTE: Recommendations are based on normal operating conditions. Severe or unusual conditions may require more frequent lubrication or oil changes. Refer to Figure 26.

Daily or every 8 hours of operation

PTO Driveline Lubricate daily or every 8 hours of operation. See Figure 25 for lubrication points.

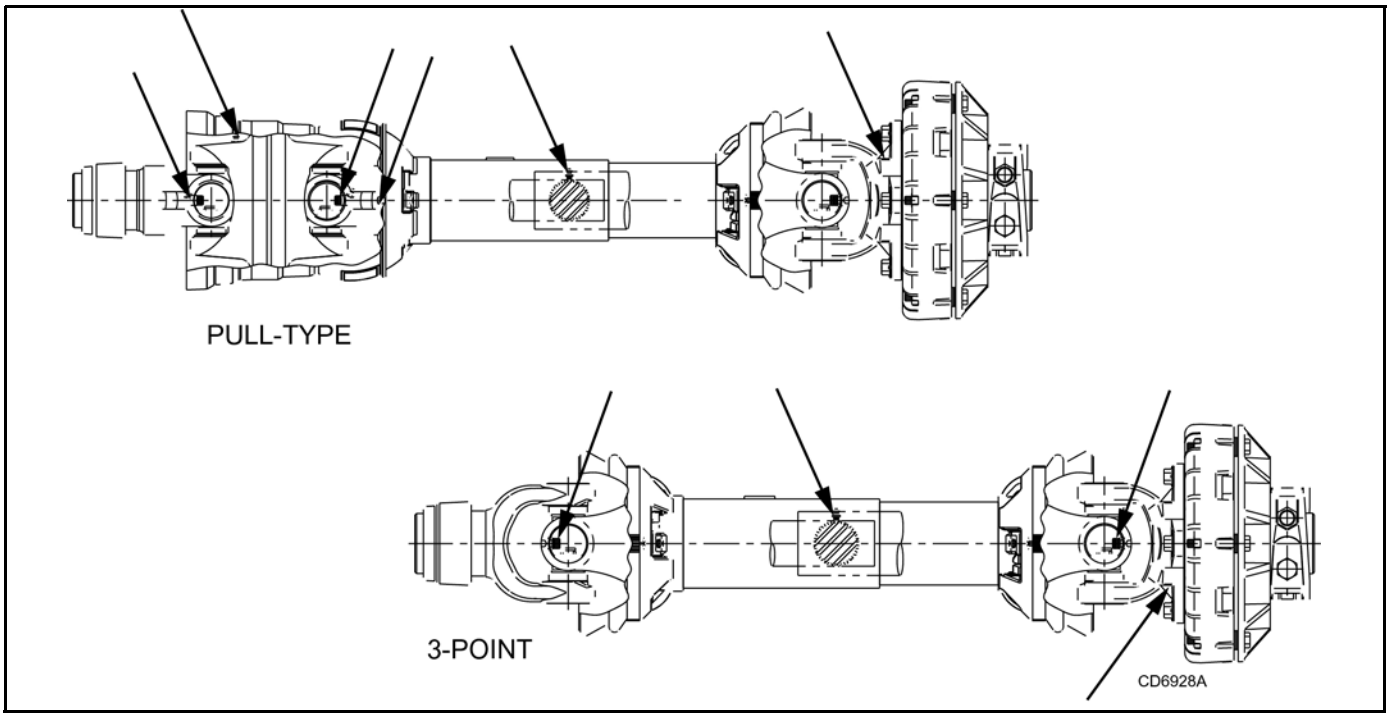


Figure 25. PTO Driveline Lubrication Points

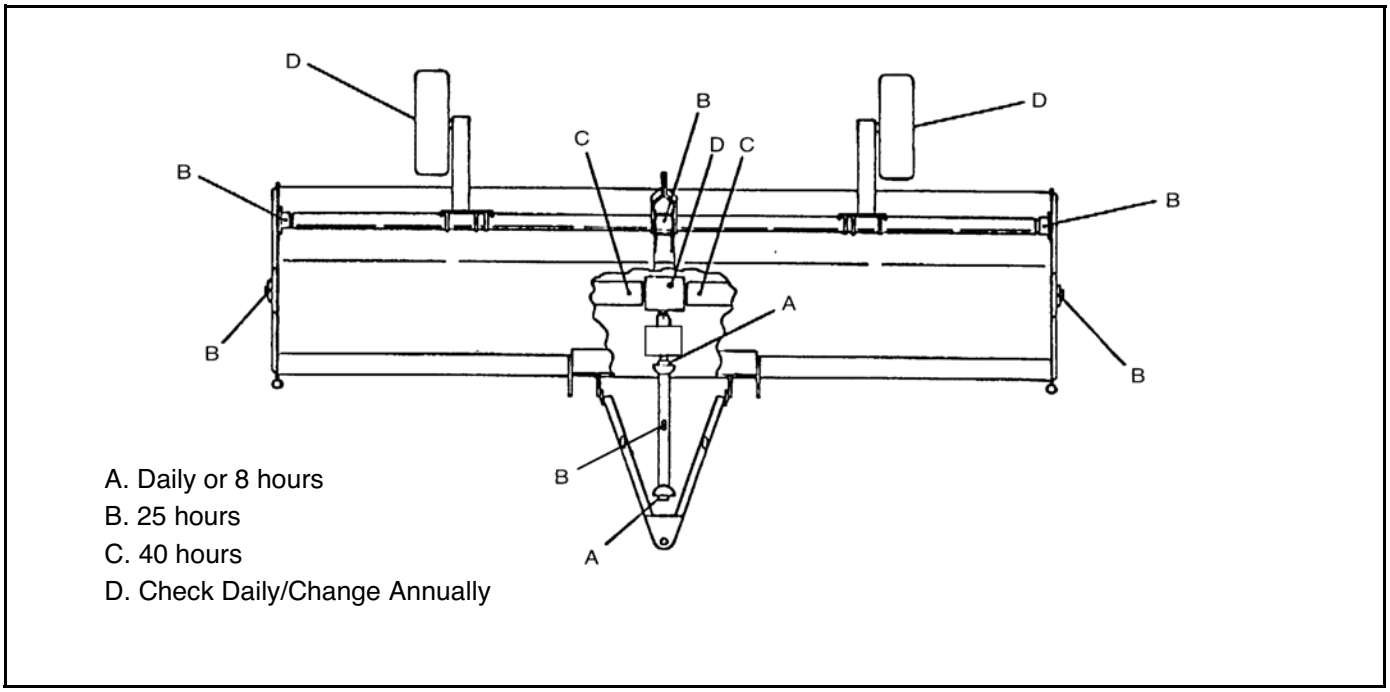


Figure 26. Lubrication Points

Daily or every 8 hours of operation

1. Lubricate PTO U-Joints and over-running clutch.
2. Check gearbox daily or every 8 hours of operation. See Figure 26 for gearbox oil fill location.

Every 25 hours of operation

1. Lubricate PTO driveline telescoping section (one location, Position B, Figure 25).
2. Lubricate rotor end bearings. (See Figure 27).

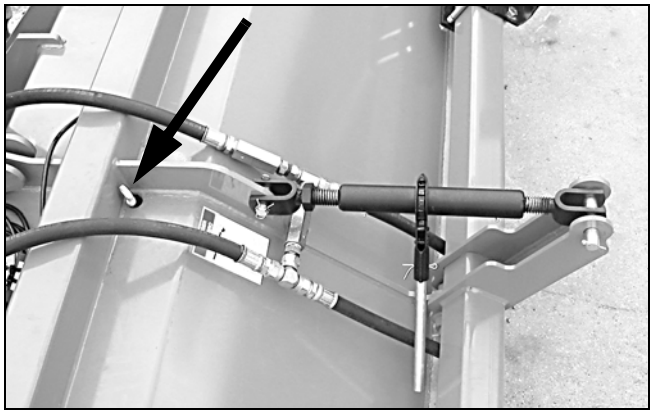


Figure 27. Gearbox Oil Fill Location

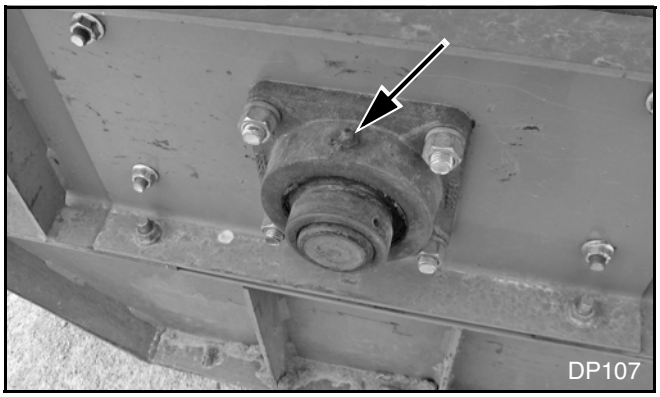


Figure 28. Rotor End Bearing Lubrication Point

Every 40 hours of operation - Figure 29

1. Lubricate rotor drive couplers next to the couplers on underside of unit and inside of flail tube (access through windows on back panel of shredder).
2. Grease the drive hubs with 10 to 20 pumps. You may use extra grease only on drive hubs.

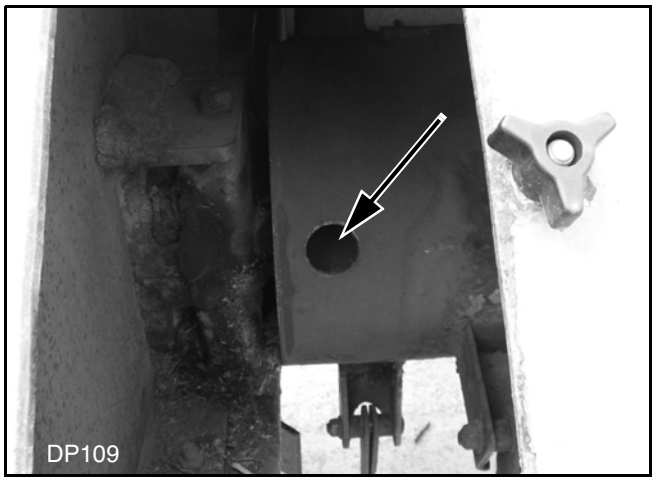


Figure 29. Drive Couplers and Hubs

Annually

1. Change gearbox oil. Refill with SAE 85W90 gear oil. Capacity: 2-1/2 U.S. quarts (110 oz.). See Figure 30.

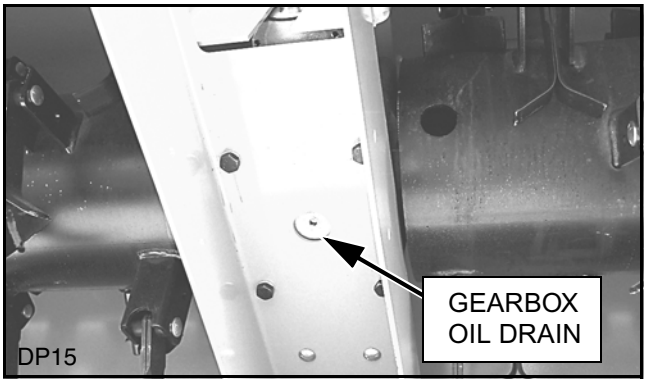


Figure 30. Gearbox Oil Drain Location

2. Repack wheel bearings. See Figure 31.

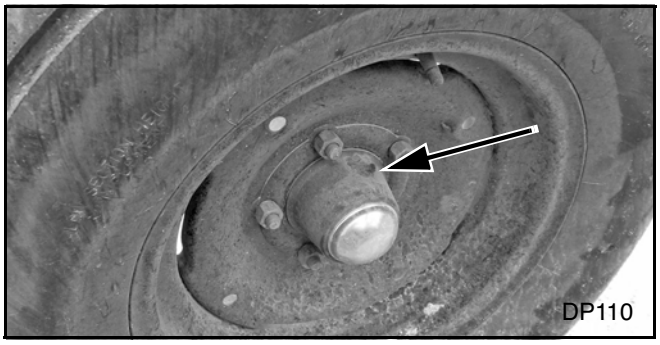


Figure 31. Wheel Bearings

3. Lubricate pivot tube (2 locations each pivot tube). See Figure 32.

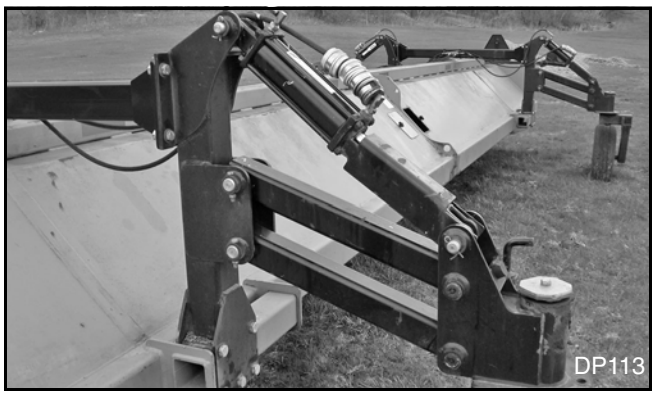


Figure 32. Pivot Tube Lubrication Points

4. Lubricate caster pivot bearings as shown in Figure 33.

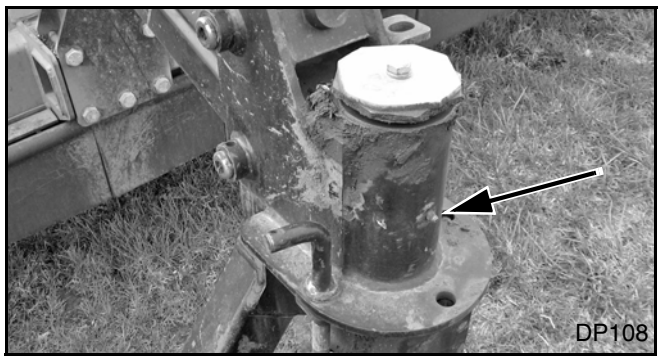


Figure 33. Wheel Caster Bearing Lubrication Points

LUBRICATION SERVICE RECORD

NOTE: See page 25 through page 28 for details. Copy this page to continue service record.

HOURS OF SERVICE																
SERVICED BY																
8 Hours or daily																
L PTO Driveline (8)																
L PTO Driveline telescope section																
L U-Joint (1)																
L Overrunning clutch (1)																
✔ Gearbox oil level																
25 Hours																
L Rotor end bearings																
L Lift Linkage																
40 Hours																
L Rotor Drive Couplers																
Annually																
C Gearbox oil																
R Wheel bearings																

GEARBOX OIL LEAKAGE

NOTICE

■ **Major oil leakage from the gearbox shaft seal area is not acceptable and could cause the gearbox to fail due to lack of lubrication and cooling. It is the operator's responsibility to check the gearbox oil level per the Lubrication Service Table.**

Before checking gearbox oil level, shut down the shredder for a couple of hours to allow the oil to drain back into the reservoir for the most accurate reading. Proper oil level should be between the full and add lines on dipstick. When oil is needed, add through the dipstick tube.

NOTICE

■ **DO NOT OVERFILL. Lab tests have proven that overfilling the gearbox can dramatically increase the gearbox operating temperature. In extreme cases this can overheat the oil, reducing its lubricating and cooling properties, and eventually cause shaft seals to deteriorate and fail. Overheated oil has an obvious burnt smell; drain it and refill with new oil. Overfilling gearbox oil can void the warranty.**

The gearbox should not require frequent servicing of oil. It is not designed to consume or lose large amounts of oil. If oil needs to be added frequently, troubleshooting the cause is required (see section below).

Gearbox leakage & Troubleshooting

Some gearbox oil leakage may be acceptable if:

1. Oil covers less than a 3-inch diameter circle around the shaft seal area (see Figure 34).
2. Oil covers less than a 4-inch diameter circle around the dipstick tube (see Figure 34).

If oil leakage covers an area larger than that described in 1 and 2, do the following:

1. Properly check oil level. If low, properly service.
2. Clean oily area of gearbox. Use a degreaser to remove all oil from outside surface of gearbox.
3. Closely monitor gearbox for 10 hours of operation. Check and service oil every 30 minutes or as needed to ensure operation does not occur with oil below the add mark.
4. If after 10 hours of operation, oil covers less than the area described in 1 & 2 above, seepage is considered to be acceptable.
5. If after 10 hours of operation, oil covers more than the area described in 1 & 2 above, this seepage is considered to be unacceptable leakage.
6. Gearboxes with unacceptable leakage should be rebuilt, replacing old seals and worn parts with new seals and parts. Gearbox rebuild and seal replacement parts are available through your local Woods dealer. Consult with Woods Technical Service for further details, rebuild recommendations, or warranty questions.

   NOTE: To separate gearbox halves for servicing, seal guards must be removed first otherwise damage to gearbox housings will occur. Seal guards can be removed by gently prying out of housing with a flat blade screwdriver using the cutout areas machined in the housing to get behind the guards. Use care not to bend guards during removal so they can be reused for reassembly. Replace guards if they are damaged.

CHANGING GEARBOX OIL

Although gearbox oil never wears out, dust, dirt, and moisture can enter through the breather during operation. These contaminants must be removed once a year to ensure a long life for working components. In very dusty or dirty conditions, change the oil twice a year.

1. Clear area of bystanders, especially children.
2. Shut off tractor, place all controls in neutral, set parking brake, remove key, and wait for all moving parts to stop.
3. Raise the unit to provide access to underside. Place safety stands or large blocks under frame.
4. Disconnect PTO driveline and hydraulic lines.
5. Place a pan under drain plug. Remove drain plug and dipstick plug (see Figure 35).
6. Allow gearbox to drain for 10 minutes.

NOTE: To remove the most contaminants, drain oil when gearbox is hot.

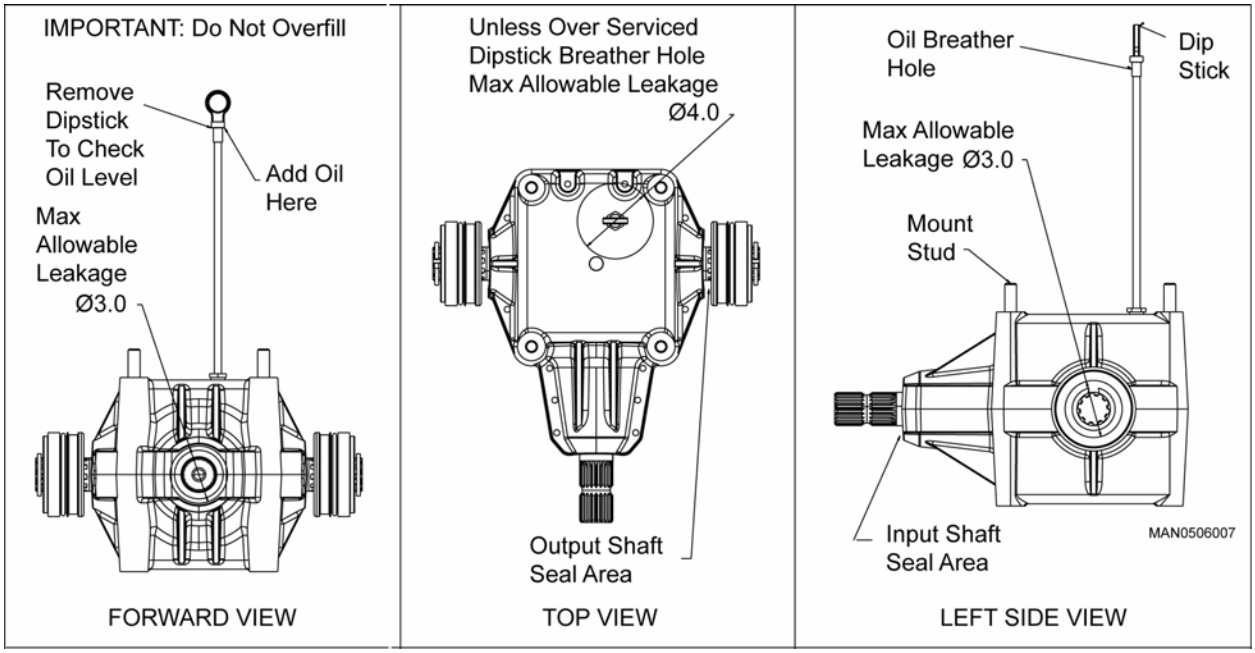


Figure 34. Acceptable Oil Leakage

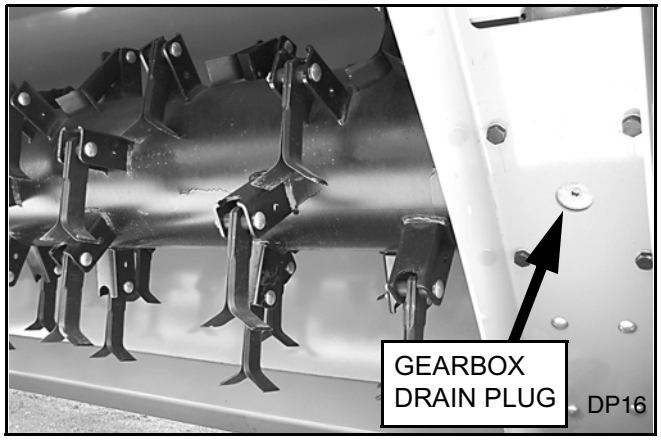


Figure 35. Drain Plug (Underside of Unit)

7. Re-install and tighten drain plug.
8. Dispose of used oil in an approved container.
9. Add SAE 85W90 gear oil through the dipstick cover. Use the dipstick to check the oil level (Figure 36) and add oil accordingly.
10. Re-install and tighten fill plug.
11. Reconnect PTO driveline and hydraulic lines.
12. Remove blocks or safety stands.

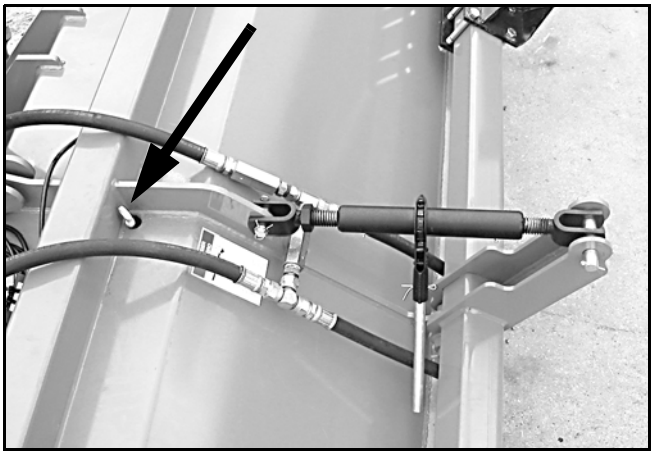


Figure 36. Dipstick Location

WHEEL SPACING

The wheels can be adjusted for alignment with crop rows.

1. Clear the area of bystanders, especially children.
2. Shut off tractor, place all controls in neutral, set parking brake, remove key, and wait for all moving parts to stop.
3. Use a jack with sufficient capacity to lift the frame.
4. To determine wheel spacing, measure from the center line of the unit. Mark positions on the frame.
5. Lift frame until wheels have cleared the ground.
6. Place safety stands or large blocks under the frame.

7. Loosen mounting bolts on one wheel assembly.

8. Slide assembly along the frame tube to new position (see Figure 37).

9. Tighten mounting bolts to specified torque level.

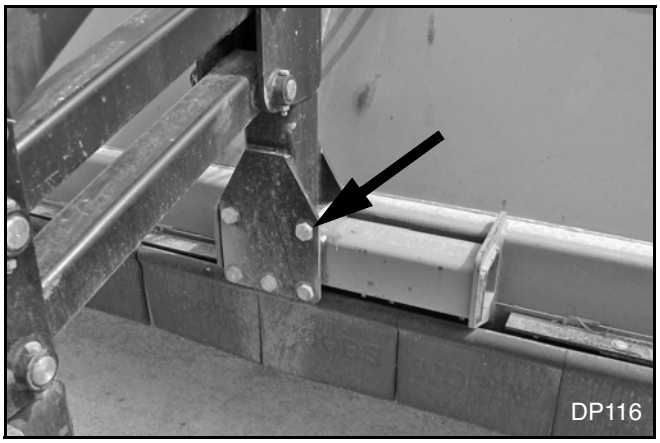


Figure 37. Positioning Wheel Assembly

10. Remove safety stands or blocks.

11. Lower and remove jack.

12. Repeat with other wheel assemblies.

REPLACING FLAIL KNIVES

⚠ WARNING

■ **Do not handle blades with bare hands. Careless or improper handling may result in serious injury.**

■ **Read Balance Statement, page 5, before replacing any knives.**

The flail knives in pairs swing on a hardened bushing, designed to reduce wear, and are sandwiched between two steel spacers. The hardened bushing is bolted to the clip with a 1/2" NC carriage bolt and a flange lock nut.

1. Clear the area of any bystanders.

2. Shut off tractor, place all controls in neutral, set parking brake, remove key, and wait for all moving parts to stop.

3. Disconnect driveline and hydraulic lines from the tractor.

4. Place jackstands with a load rating of 2000 lbs or more under the tubular beams on the shredder body. A minimum of four jackstands must be placed under the shredder before working underneath the unit.

5. Loosen and remove the worn knife and its opposite on the other side of the rotor. Discard worn knives and their mounting hardware.

6. Replace with new knives and mounting hardware (see Figure 38).

Figure 38. Flail Replacement

NOTICE

■ **To maintain rotor balance, always replace opposite (180°) pairs of knives and mounting hardware.**

7. Tighten flail mounting flange lock nut.

8. Replace additional worn flails following step 5 and step 6.

9. Remove safety stands or blocks from under frame.

10. Lower unit and remove jack.

11. Attach driveline and hydraulic line to tractor.

12. Refer to Balance Statement, page 5**,** for balance issues.

REPLACING RUBBER SHIELD FLAPS

Rubber shield flaps on the front of the unit deflect or prevent stones or debris from being ejected when operating unit. Replace if damaged or missing to provide a safe work environment. To replace, follow this procedure:

1. Clear the area of bystanders, especially children.

2. Lower the unit to the ground, place all controls in neutral, shut off engine, set park brake, remove key, and wait for all moving parts to stop before dismounting.

NOTE: For 3-point hitch units, unhook to gain access to center flaps.

3. Remove 3/8" nut, washer and carriage bolt from each worn flap. (Replace any worn or damaged hardware. See page 53 for hardware sizes.)

Figure 39. Front Rubber Shield Flaps

4. Replace damaged flap with new flap and secure with correct hardware.

NOTE: Use only genuine Woods parts when replacing flaps.

SERVICING ROTORS (FLAIL TUBES)

⚠ WARNING

■ **Do not handle blades with bare hands. Careless or improper handling may result in serious injury.**

■ **Any excessive vibration caused by worn or missing knives or damaged drive components can cause damage to the shredder and personal injury. Excessive vibration can also be transmitted through the hitch mounts and PTO to the tractor resulting in tractor damage.**

■ **Once field operation has been started, it is the responsibility of the owner/operator to monitor and maintain acceptable rotor balance. Refer to Balance Statement, page 5, for details.**

NOTICE

■ **Read Balance Statement, page 5, before replacing any knives.**

Refer to Replacing Knives, page 31, for knife or knife component replacement.

The Woods Center Drive Flail Shredder has been designed for durability when shredding any type of crop. Some operating conditions will shorten the life of the shredder or components. These include operating too low to the ground or in frequent contact with the ground, and contact with large rocks or other foreign objects. Over time, some types of soils and crops can cause wear or damage to rotor components and affect rotor balance, leading to increased vibration. Continued operation with excessive vibration can damage the shredder, requiring rotor service, removal, or replacement.

Factory balanced replacement rotors are available through your local Woods dealer. Contact Woods Technical Service for re-balance options or further details.

Follow the procedure below if rotor removal or replacement is required.

⚠ CAUTION

■ **Use a suitable lifting device of sufficient capacity. Use adequate personnel to handle heavy components.**

1. Clear the area of any bystanders.
2. Shut off tractor, place all controls in neutral, set parking brake, remove key, and wait for all moving parts to stop.
3. Remove PTO driveline from the shredder.
4. Fully disconnect the shredder from the tractor.
5. Remove wheel arms.
6. Use a hoist, crane, or frame of sufficient capacity to raise the front of the unit and allow the back of the unit to rest on a solid surface (blocks).
7. Leave lifting device attached while working on rotors to prevent tipping.

Removing Components

Refer to Replacing knives, page 31, for knife or knife component replacement.

Refer to Servicing Rotors, page 32, before proceeding with these steps.

1. Follow steps in the previous section to prepare and position shredder. Support each end of the rotor (flail tube) to be removed with a crane or hoist.
2. Remove bearing locking collar (see Figure 40).
3. Remove the six bolts holding the bearing plate to the body assembly.
4. Slide rotor out to disengage from the center drive coupling.
5. Thoroughly clean and inspect gearbox drive couplings for wear and replace if any wear is detected. Also inspect the rubber O-ring for wear or tears and replace if any wear or tears are detected.
6. Remove crossmember from the underside of the shredder, providing access for the removal of the gearbox.
7. Remove gearbox, if damaged. This will require removal of the second rotor (repeat steps 1-5 above).

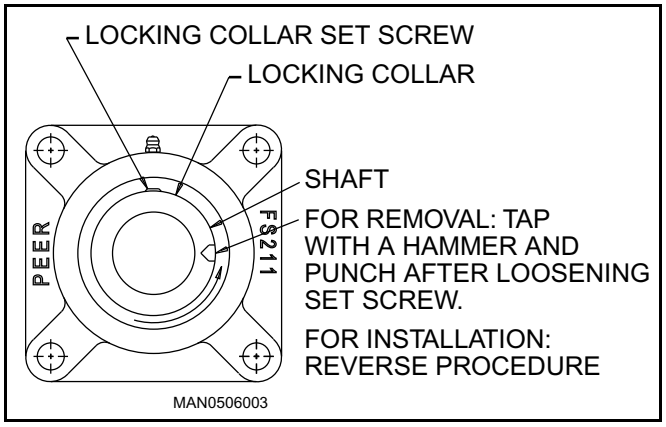


Figure 40. Locking Collar

Replacing Components

1. Place new stud bolts into gearbox using Loctite® No. 271 or equivalent.
2. Remount gearbox. The gearbox oil dipstick should protrude out the top panel of the shredder for checking and servicing. Reinstall the nuts and lock washers securing the top of the gearbox to the shredder gearbox mount plate and torque to specifications in Bolt Torque Chart, page 68.
3. Remount the crossmember securing the bottom of the gearbox and torque to specifications in Bolt Torque Chart, page 68.
4. Install drive couplings and reapply new grease around entire O-ring and gear teeth surfaces.
5. Install rotors (flail tubes) in the opposite fashion as removal. Position rotors with each end supported by a crane or hoist so that it is aligned with the gear coupling and gearbox output shaft center lines. The bearing (stub shaft) end of the rotor will protrude out of the hole in the end sheet.
6. With gentle care not to damage gear coupler teeth or O-ring, provide pressure to align gear teeth and slide the rotor back into its original position.

   NOTE: When re-installing rotors, the gear coupling grease fitting will need to be temporarily removed to allow for air to purge from the coupler assembly during installation. After successful installation, reinstall grease fitting and re-service.
7. Reinstall bearing plate assembly and bolts, and apply appropriate torque.
8. Reinstall bearing locking collar and tighten (see Figure 40).

NOTICE

■ If removing rotor drive coupling, use Loctite No. 271 or equivalent and special high collar lock washers to keep bolts from loosening.

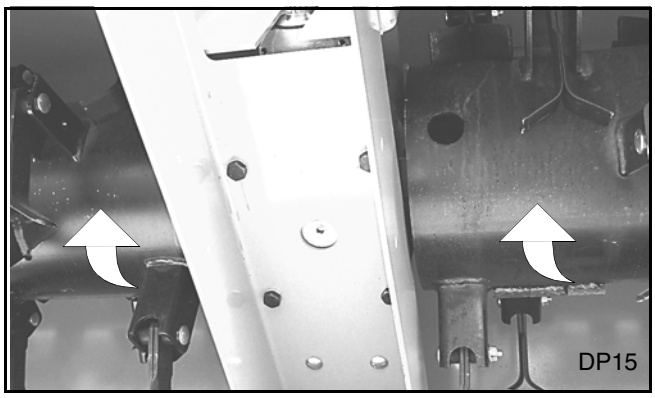


Figure 41. Rotor Direction of Rotation

REPLACING STUB SHAFT

1. Remove rotor (see Servicing Rotors (Flail Tubes), page 32).
2. Remove three 1/2 x 2-1/2 hex bolts in taper lock hub and re-install bolts in three threaded holes (see Figure 42).
3. Tighten bolts evenly to release taper lock hub from stub shaft. **NOTE:** You may have to give a sharp blow directly to each bolt head to help the hub disengage.
4. Unscrew stub shaft from the rotor tube.
5. Install new stub shaft, reversing Steps 1-3.

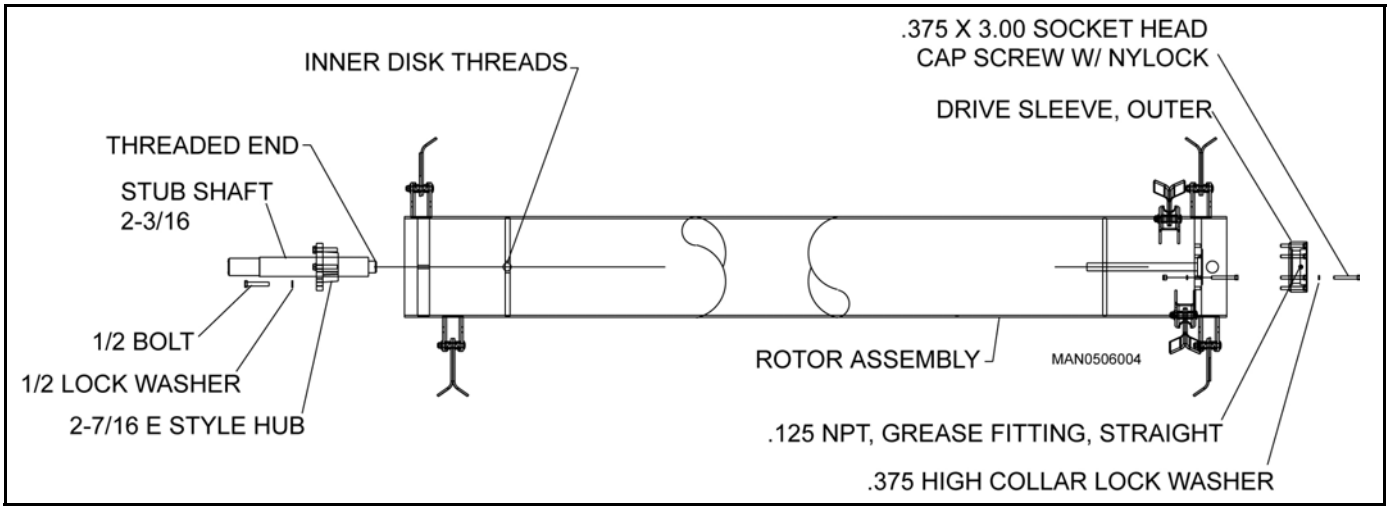


Figure 42. Stub Shaft Assembly

Removing the Driveline

1. Shut off tractor and disengage PTO.
2. Disconnect driveline from PTO shaft.
3. Remove the bolts and clamp that attaches the clutch to the shredder's input shaft.

   NOTE: The shaft is heavy. Grasp the clutch firmly with both hands and slide off the input shaft.

Rebuilding Friction Pack

Disassembly

1. Position clutch and universal joint assembly on a bench so that end is accessible.
2. Remove the long bolts on the outside of the housing that hold the friction pack together.
3. Remove the plate(s) and all internal components. Leave the yoke/hub intact.
4. Discard friction discs.
5. If rebuilding the overrunning clutch, refer to Rebuilding Overrunning Clutch, page 35, beginning with Step 2.

Inspection

1. Inspect the steel and iron parts for wear, warping, or cracks, and replace if necessary.
2. Inspect the yoke/hub for looseness. If there is more than.03 end play, replace.
3. Clean any rust or dust from the plate surfaces with a wire brush or steel wool.

Assembly

1. Place one new friction disc, then separator plate, then second friction disc into housing.
2. Add the pressure plate so that the flat surface rests on the friction disc. **NOTE:** The tangs on the plate must fall into the reliefs in the housing.
3. Add the disc spring so that its inside diameter contacts the fins of the pressure plate.
4. Assemble the compression plate and all the long bolts. Make sure all nuts rest in their pockets.
5. Tighten all long bolts to 30 lbs-ft.

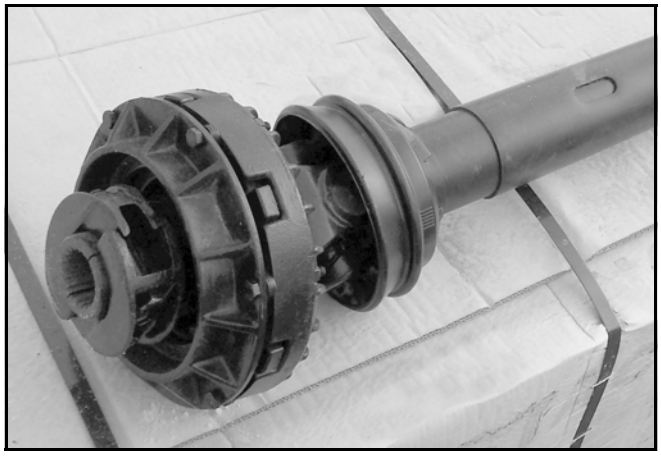


Figure 43. Weasler Modular Friction Clutch (24K)

Rebuilding Overrunning Clutch

Disassembly

1. Remove the four bolts that secure the friction pack. Remove the friction pack.
2. Using screwdriver and pliers, remove the retaining ring that holds the overrunning clutch together.
3. Slide the collar and washer off the clutch hub, noting the orientation of the collar for reinsertion.
4. Remove and discard the keys and leaf springs.

Inspection

1. Inspect the steel parts for wear and replace if necessary.
2. Inspect the yoke/hub for looseness. If there is more than .03 end play, replace.
3. Using screwdriver, scrape any hardened grease from the overrunning key pockets.

Assembly

1. Using a multi-purpose high-temperature EP grease or equivalent lithium grease, inject one grease gun pump into each key pocket. Evenly wipe two more pumps over the overrunning surface.
2. Press a new leaf spring into each pocket. The ends should touch the bottom of the pockets.

Figure 44. Weasler Automatic Clutch (30K)

3. Add new keys. With one hand, hold the two keys in the pockets.
4. Slide the collar onto the hub, orienting collar correctly.
5. Add washer.
6. Install retaining ring.
7. Make sure clutch spins freely and only in correct direction.
8. Reassemble friction pack.

MOUNTING CLUTCH TO SHREDDER

1. Mount and bolt the clutch hub onto the shredder input shaft. Make sure shaft and clutch grooves line up.

   NOTE: Torque mounting bolts to 160 ft lbs.
2. Re-install any shielding that was moved or removed.
3. Run the clutch before using. Refer to Breaking In the Clutch (Run In), page 32.

NOTES

TROUBLESHOOTING

The Woods Flail Shredder uses swinging flails to pick up and shred crop residue left in the field. It is a simple and reliable system that requires minimal maintenance.

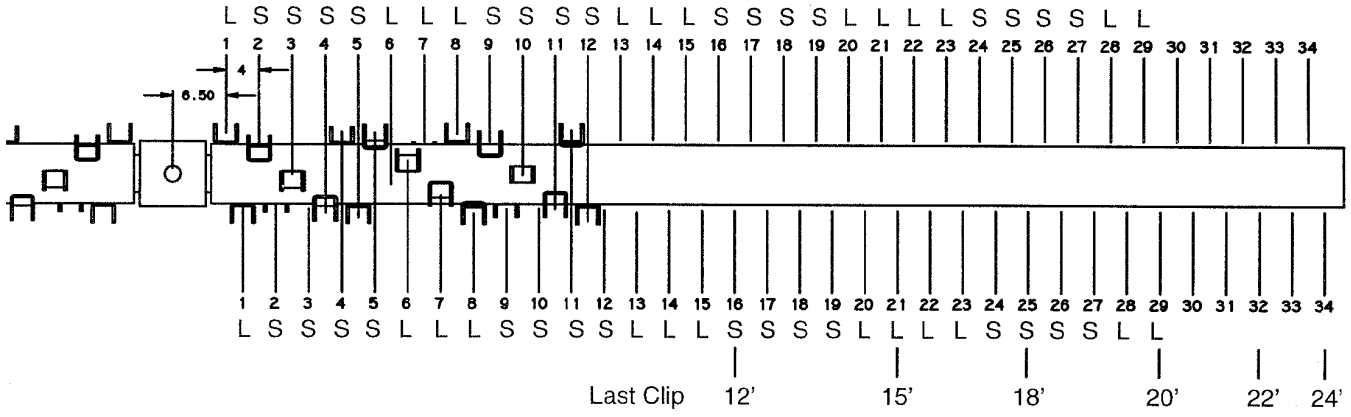
The following table lists problems, causes, and solutions that you may encounter. If you encounter a problem that is difficult to solve even after reading through this table, please call your local Woods dealer. When calling, please have this manual and your unit's serial number ready.

PROBLEM	CAUSE	SOLUTION
Shredder doesn't track	Poor wheel spacing	Set wheels in center of crop rows.
	3-Point not set	Set 3-point hitch in non-sway position.
	Shredder not level	Level shredder (see Set Operating Height, page 20).
	Irrigation furrows not even	Set wheels against seed bed
Shredder doesn't follow ground contour	3-Point not set	Set 3 point in float position.
		See tractor manual to set Load Sensing hydraulic system.
	Shredder too high	Set shredder closer to ground.
	Irrigation furrows not even	Set wheels against seed bed.
Shredder vibrates	Driveline doesn't telescope.	Remove, disassemble, and clean telescoping joint.
	Rotor out of balance	Replace damaged or broken flails and flails 180 degrees opposite.
		Check for missing balance weights or rebalance.
Debris is being thrown out from under shredder	Shredder set too low	Raise shredder.
	Knives excessively worn	Replace knives.
	Rubber shields missing	Replace flaps immediately.
Crop residue is being left	Traveling too fast	Slow travel speed.
	Shredder too high	Lower shredder.
	Improper Knives	Change Knives.
	Crop residue strip left in shredder center	Add center cutter or divider.

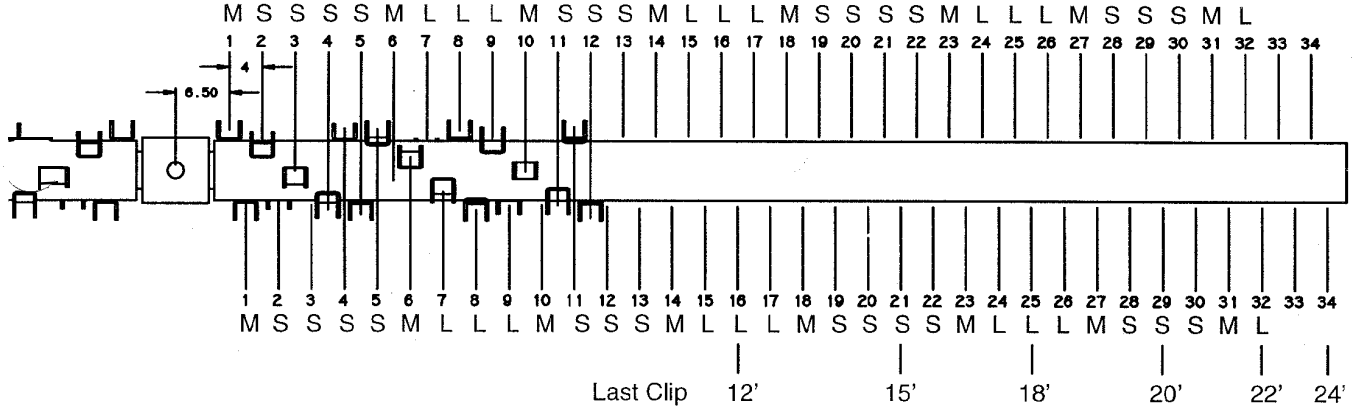
WORKSHEET FOR CONTOUR FLAIL PATTERNS

NOTE: Use the same knives on opposite clips to keep balanced.

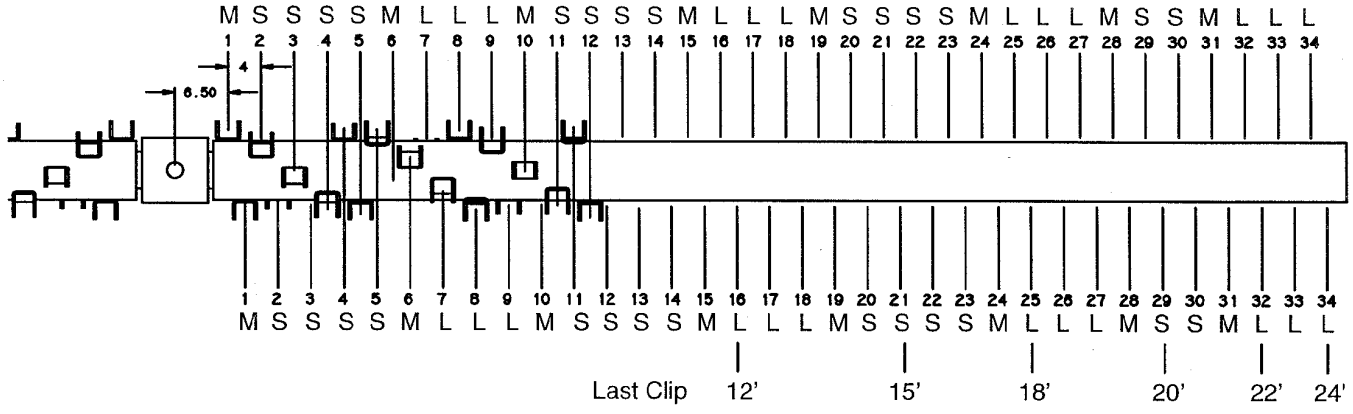
30" ROWS



34" ROWS



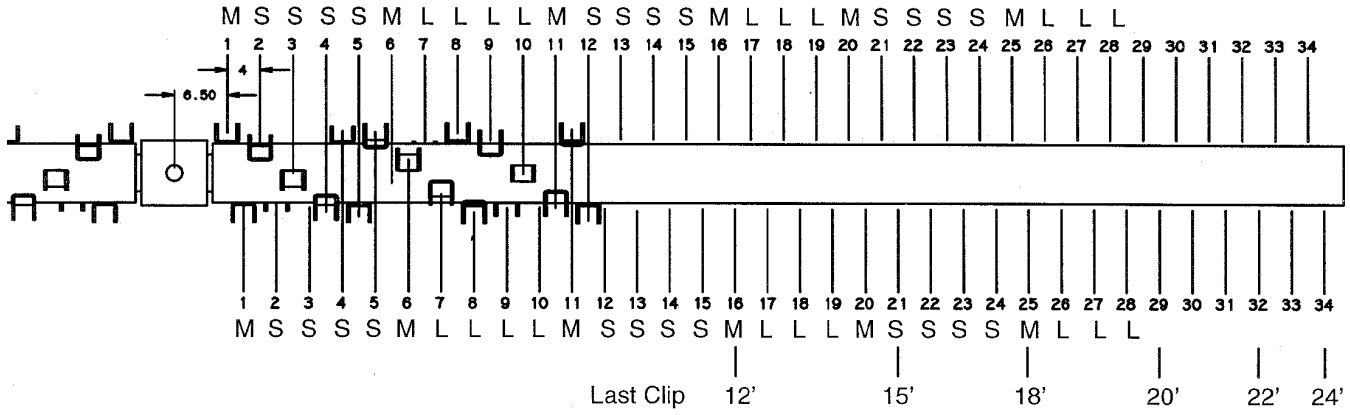
36" ROWS



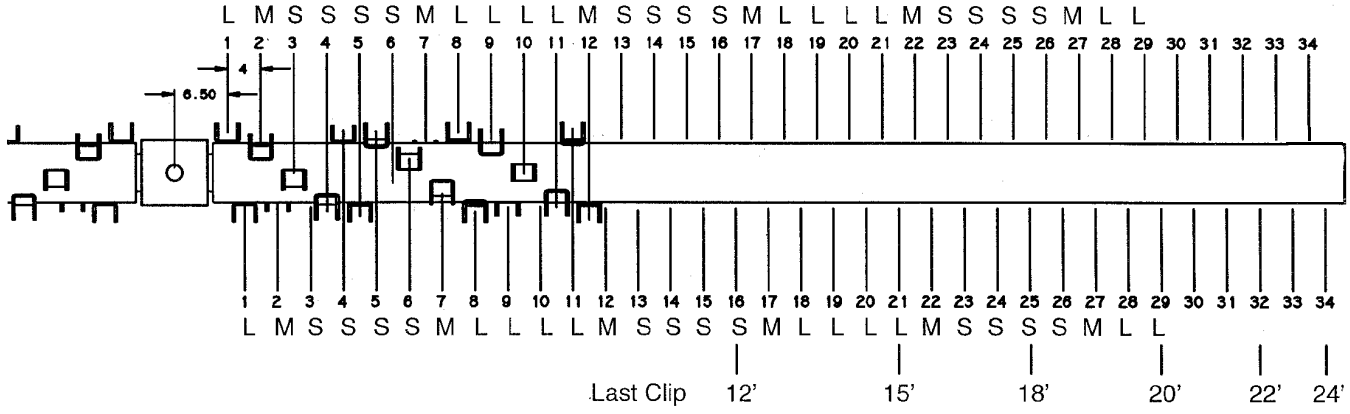
WORKSHEET FOR CONTOUR FLAIL PATTERNS

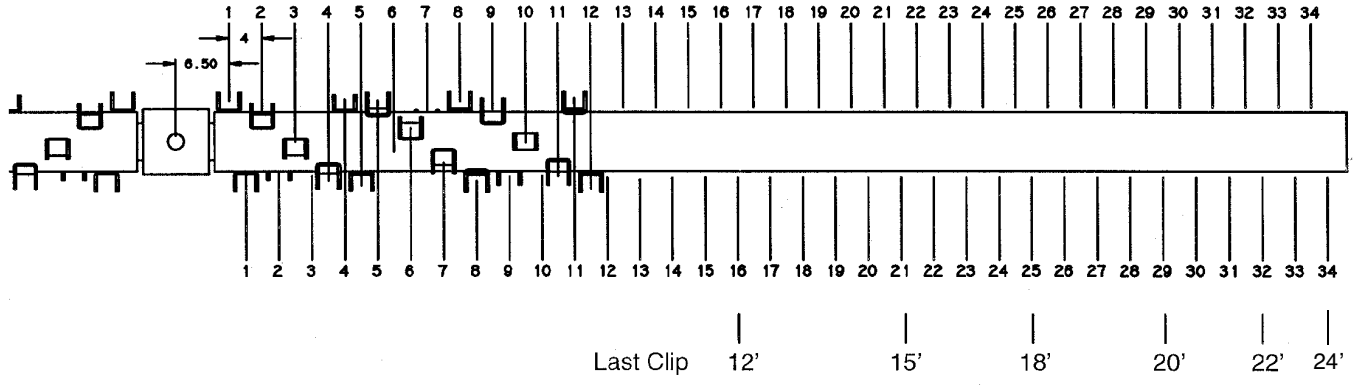
NOTE: Use the same knives on opposite clips to keep balanced.

38" ROWS



40" ROWS





ASSEMBLY

DEALER SET-UP INSTRUCTIONS

⚠ WARNING

- **Do not allow bystanders in the area when operating, attaching, removing, assembling, or servicing equipment.**
- **Do not handle blades with bare hands. Careless or improper handling may result in serious injury.**
- **Keep hands and body away from pressurized lines. Use paper or cardboard, not hands or other body parts to check for leaks. Wear safety goggles. Hydraulic fluid under pressure can easily penetrate skin and will cause serious injury or death.**
- **Make sure that all operating and service personnel know that if hydraulic fluid penetrates skin, it must be surgically removed as soon as possible by a doctor familiar with this form of injury or gangrene, serious injury, or death will result. CONTACT A PHYSICIAN IMMEDIATELY IF FLUID ENTERS SKIN OR EYES. DO NOT DELAY.**
- **Check that all hardware is properly installed. Always tighten to torque chart specifications unless instructed otherwise in this manual.**

⚠ CAUTION

- **Always wear relatively tight and belted clothing to avoid getting caught in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.**
- **Use a suitable lifting device of sufficient capacity. Use adequate personnel to handle heavy components.**

1. Open the crate and cartons containing the attaching components and mounting hardware.
2. Use the packing list to check that all parts have been shipped.

For Some Models Shipped on End

Units that stand on their aft ends during shipping have a dipstick shipping plug installed in the gearbox dipstick tube to prevent leakage during shipping.

NOTICE

- **For units shipped on aft end, the dipstick shipping plug must be removed before shredder operation. Replace plug with dipstick in filler tube after shredder has been removed from truck and leveled.**

After the unit has been leveled for a couple of hours, check oil level and service through the dipstick/filler tube as required.

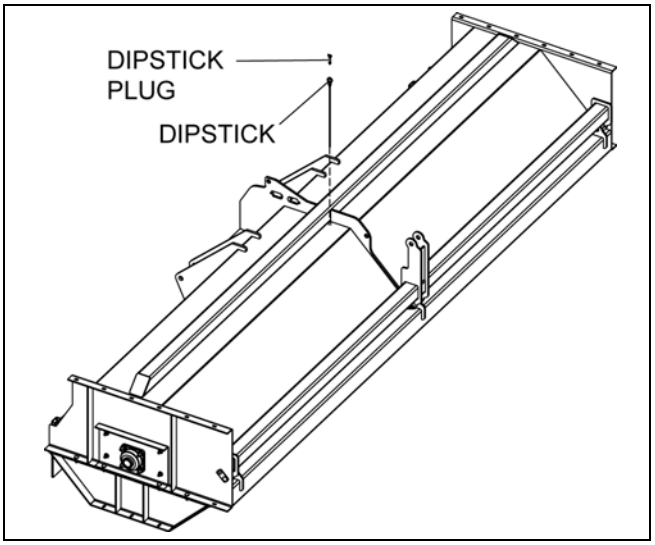


Figure 45. Dipstick Shipping Plug Removal

WHEEL ASSEMBLY

1. To get desired row spacing, measure from center of frame and mark suspension mounting tubes.
2. Bolt strut uprights to shredder frame but do not tighten at this time, Figure 46. See parts list pages 50 and 51 for hardware sizes.

Figure 46. Strut Uprights Installed

3. Attach crossmember to strut uprights. Tighten all mounting hardware at this time per torque chart, Figure 47.

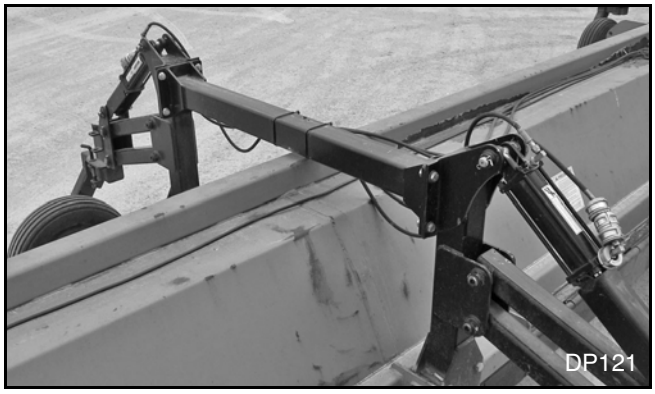


Figure 47. Crossmember Installed

4. Pin pivot tubes and caster pivots to strut uprights as shown, Figure 48.
5. Attach cylinders, Figure 48.

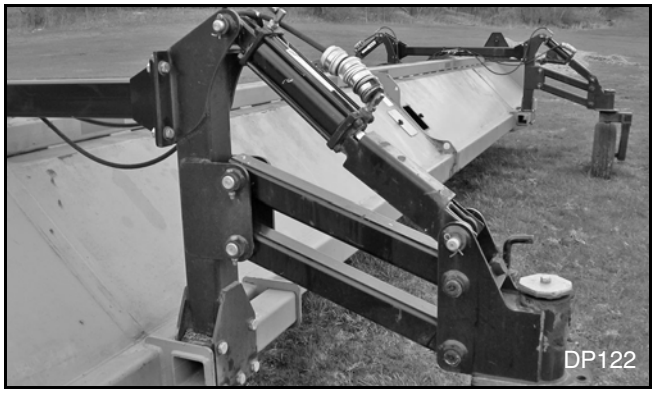


Figure 48. Pivot Tubes, Caster Pivots & Cylinders Installed

6. Attach caster yoke assembly to pivot assembly, Figure 49. Use Loctite on hex bolt.

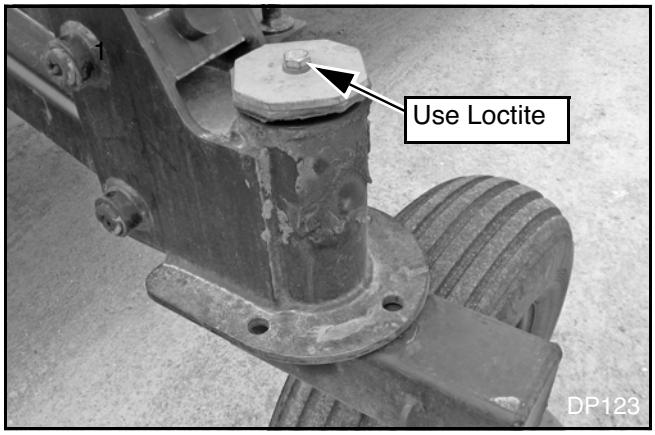


Figure 49. Caster Yoke Installed

7. Attach cylinders, fittings, and hoses. See parts section.
8. Connect hoses to tractor and cycle cylinder in and out to remove air from system. Check for leaks at this time.
9. While shredder is setting on skids, retract cylinders fully until cast yokes are high enough to mount wheels. Torque wheel nuts per torque chart.
10. Check tire pressure. Recommended tire pressure is 30 PSI.
11. Tighten mounting bolts to their specified torque.

3-POINT UNITS

12. Attach floating upper mast (1) to shredder using two hardened bushings, 1 x 5" hex bolts, lock nuts, and four 3/4 x 3" spacers. (Keep hardware loose.)
13. Attach front top link spacer, bolts, and lock nuts to front of upper mast assembly.

    NOTE:
    For **Quick Hitch Cat II**, use spacer in front lower hole of upper mast assembly.
    For **Quick Hitch Cat III**, use spacer in front upper hole of upper mast assembly.
    Without Quick Hitch, use spacer through top link pivot in front upper hole of upper mast assembly.
14. Assemble lower 3-point hitch pin assembly, spacers, and klik pin to lower mast (both sides).

    NOTE: For **Quick Hitch Cat II & III**, place 1-3/4 OD spacer on the inside and 1-7/16 OD spacer on the outside.

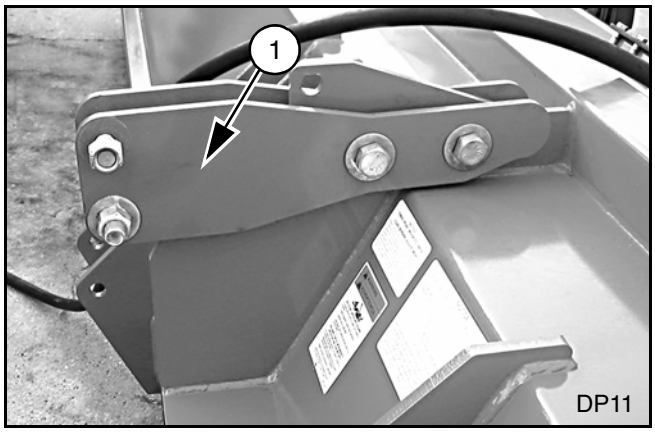


Figure 50. Floating Upper Mast Installed

INSTALL PULL-TYPE HITCH

1. Install hitch to 3-point lower mounts using pins and klik pins.
2. See page 50 for parts breakdown.
3. Attach tow chain to hitch.

Figure 51. Pull-Type Hitch Installed

ALL UNITS

1. Install PTO drive line by sliding the yoke with the slip clutch over input shaft (See Figure 53).
2. Tighten interlocking clamp bolts to their specified torque of **160 ft lbs.**

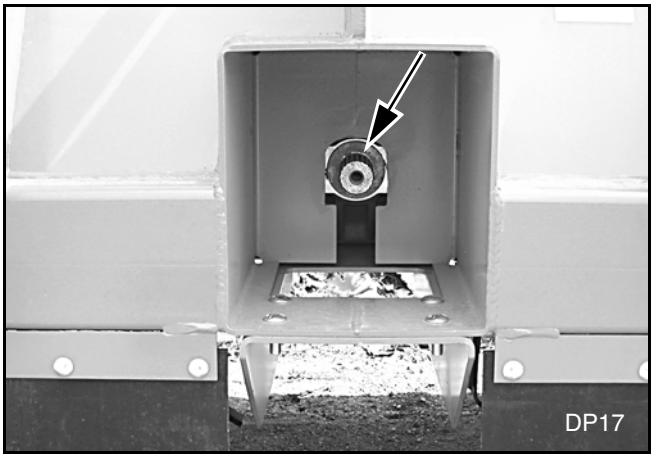


Figure 52. Gearbox Input Shaft

MANUAL STORAGE TUBE INSTALLATION

Mount the manual tube to the inside of the shredder side sheet, using three 3/8 x 1-1/4" hex bolts, washers, and 3/8" nuts. Mounting holes are located above the bearing plate (see Figure 53).

Figure 53. Manual Tube Installed

RUBBER BELTING INSTALLATION

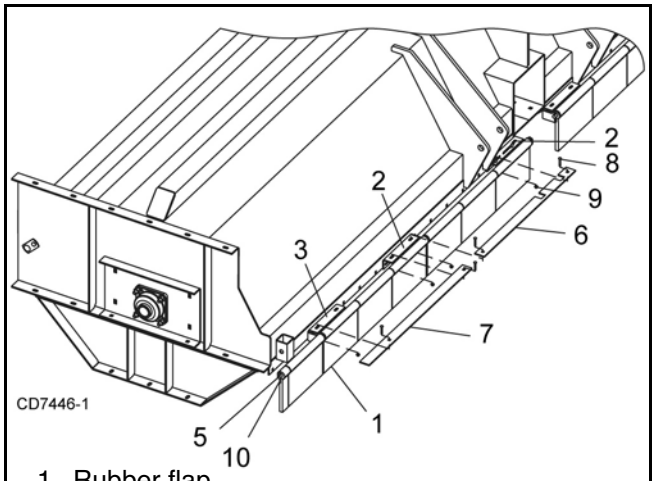
1. Remove all components from shipping carton. Make sure that all required hardware is included.
2. Attach rubber belting and bars to front of shredder using 3/8 NC x 1-1/2 carriage bolts and 3/8 flange lock nuts.

   NOTE: Use equal number of belting and bars on each side of shredder.
3. Tighten all hardware.

RUBBER FLAP INSTALLATION

1. Remove all components from shipping carton. Make sure that all required hardware is included.
2. Attach flap brackets to the front of the shredder using 3/8 NC x 1-1/2 carriage bolts and 3/8 flange lock nuts.

   NOTE: Use flap brackets to space flap brackets out evenly across front of shredder.
3. Attach flap bars to flat brackets using 3/8 NC x 1-1/2 carriage bolts and 3/8 flange lock nuts.
4. Assemble rod and rubber flaps through flap brackets and secure using 3/16 x 1-1/2 cotter pins.
5. Tighten all hardware.
6. For detailed installation instructions, see the parts diagram and instruction sheet the comes with the swing flap kit designed for each shredder.



1. Rubber flap
2. Flap bracket, right
3. Flap bracket, left
5. flap rod
6. Swing flap bar, mast plate
7. Swing flap bar
8. 3/8 NC x 1 Carriage bolt
9. 3/8 NC Flange lock nut
10. 3/16 x 1-1/2 Cotter pin

Figure 54. Rubber Flap Installation (15' Shown)

SAFETY LIGHT INSTALLATION

1. Remove all components from shipping carton. Make sure that all required hardware is included.

2. Attach dual safety lights (Figure 48) to safety light mounting brackets (9) using cap screws (17) and lock nuts (18).

NOTE: Make sure that light lenses are in the correct position in relation to direction of equipment travel: amber lenses on the outside, red lenses on the inside facing rear of shredder.

3. Install light bracket (5) on end of shredder using cap screws (26) and lock nuts (25) on top of end sheet.

4. Attach light mounting brackets (9) to light bracket (5) using pins (16).

5. Secure SMV sign (8) to light bracket (5).

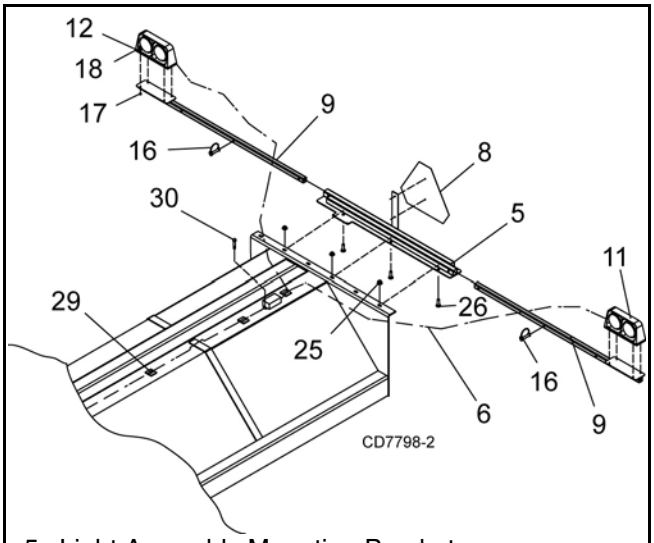
6. Plug ends of wiring harness into corresponding plugs of the light units

NOTE: Left side of wishbone harness is labeled "Left".

7. Run wiring harness along top of shredder and secure with enclosed adhesive-backed clamps (29) approximately every two feet.

8. Secure wiring harness module to top of shredder using self tapping screw (30).

9. Connect 7-pin connector of wiring harness to tractor and test all light functions before actual use.



5. Light Assembly Mounting Bracket
8. SMV Sign
9. Safety Light Mounting Bracket
11. Dual Lamp - Left Hand
12. Dual Lamp - Right Hand
16. Pin
17. 1/4 Flange Lock Nut
18. 1/4 NC x 1 HHCS
26. 1/2 NC x 1-1/2 Carriage Bolt
29. Adhesive backed clamps
30. 5/16 NC x 3/4 Self Tap Screw

Figure 55. Safety Light Installed

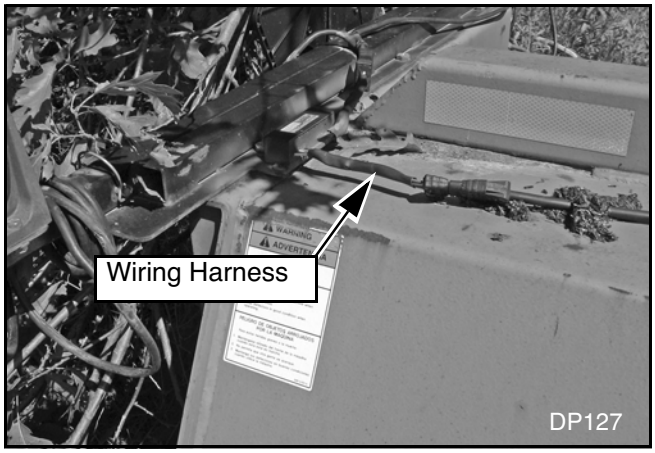
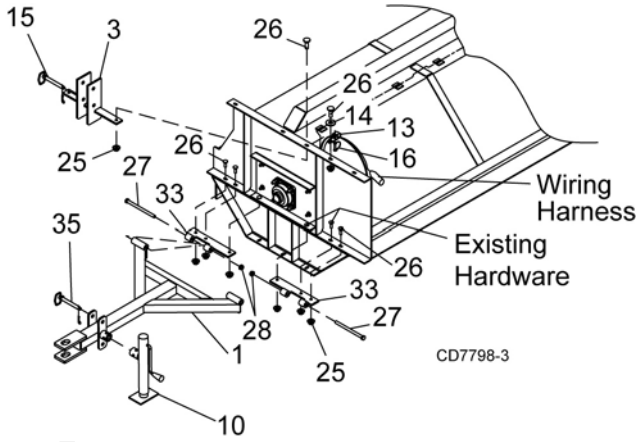


Figure 56. Safety Light Wiring

END TOW HITCH INSTALLATION

1. Attach lower end tow hitch mount (4) using carriage bolts (26), and lock nuts (25).
2. Attach tongue lockup bracket (3) using carriage bolts (26), and locknuts (25).
3. Bolt hitch (1) to tow hitch mount brackets (33) using cap screws (27) and locknuts (28).
4. Attach hose bracket (13) to shredder using carriage bolts (26), flat washer (14) and locknuts (25).
5. Secure tongue (1) to tow hitch mount (4) using cap screws (27) and locknuts (28).
6. Install safety chain.
7. Store tongue (1) and wire harness as shown, Figure 56.



1. Tongue
3. Tongue Lock Up
13. Hose Bracket
14. 1/2 Flat Washer
15. 3/4 Hitch Pin
25. 1/2 NC Flanged Lock Nut
26. 1/2 NC x 1-1/2 Carriage Bolt
27. 5/8 NC x 9 HHCS
28. 5/8 NC Flanged Lock Nut
33. Lower End Transport Mount
35. Pin

Figure 57. End Tow Hitch Installation

CENTER CUT KIT INSTALLATION

Block Shredder

⚠ WARNING

■ **Never go underneath equipment (lowered to the ground or raised) unless it is properly blocked and secured. Never place any part of the body underneath equipment or between moveable parts even when the engine has been turned off. Hydraulic system leak down, hydraulic system failures, mechanical failures, or movement of control levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death. Follow Operator's Manual instructions for working underneath and blocking requirements or have work done by a qualified dealer.**

To minimize the potential hazards of working underneath the shredder, follow these procedures.

1. Place jackstands with a load rating of 2000 lbs or more under the tubular beams on the shredder body. A minimum of four jackstands must be placed under the shredder before working underneath the unit.

   Do not position jackstands under wheels, axles, or wheel supports. Components can rotate and cause shredder to fall.

2. Consider the overall stability of the blocked unit. Just placing jackstands underneath will not ensure your safety.

   The working surface must be level and solid to support the weight on the jackstands. Make sure jackstands are stable, both top and bottom. Make sure shredder is approximately level.

3. With full shredder weight lowered onto jackstands, test blocking stability before working underneath.
4. If shredder is attached to tractor when blocking, set the brakes, remove key, and block shredder before working underneath.
5. Securely block rear tractor wheels, in front and behind. Tighten tractor lower 3-point arm anti-sway mechanism to prevent side-to-side movement.
6. Prior to installing optional Center Cutter Kit, remove Center Deflector.

Assemble Motor and Blade - Figure 58

1. Install elbow (8), adapter (9), elbow (10) and hose (11) to the IN or PRESSURE side of the hydraulic motor.
2. Install adapter (23) and hose (11) to the OUT or RETURN side of the motor.
3. Place motor (4) inside motor housing (2) and secure using six 9/16 NC x 1-1/2 cap screws (7) lock nuts (6).
   Make sure OUT or RETRUN side of motor is on the open side of the motor housing. Torque hardware to 171 lbs-ft.
4. Slide blade hub (1) over motor shaft, install 1/4" key and secure using one 5/16 NF x 1-1/2 cap screw (20), flat washers (33) and lock washer (34) in the bottom of the shaft. Torque to 19 lbs-ft.
5. Clamp hub to shaft using two 3/8 NC x 1-3/4 cap screws (18) and lock nuts (22). Torque to 35 lbs-ft.
6. Secure blade (3) to blade hub using two 3/8 NC x 1-1/4 cap screws (19) and flange lock nuts (22). Torque to 35 lbs-ft.

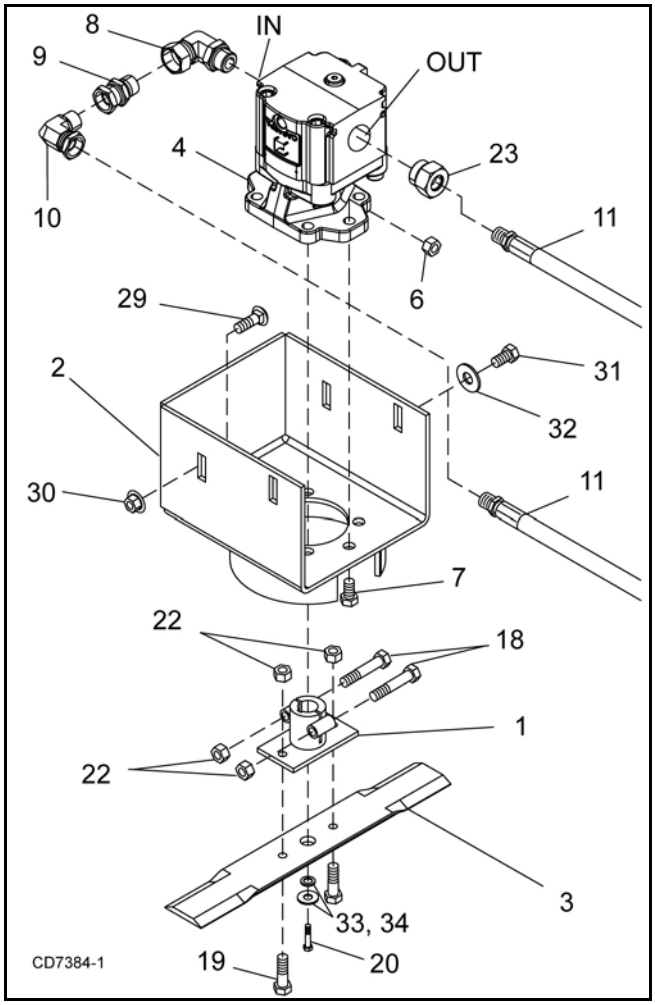


Figure 58. Motor Assembly

Install Motor Housing - Figure 59

1. Slide motor assembly between shredder center channel and secure to the left side using two 1/2 NC x 1-1/4 carriage bolts (29) and flange lock nuts (30).
2. Install 1/2 NC x 1 cap screw (31) and flat washer (32) to the right rear hole of the motor housing and secure with flange lock nuts (30).
3. Install 1/2 NC x 1-1/4 carriage bolt (29) and flange lock nut (30) into the right front hole.
4. Raise motor housing to the bottom of the mounting slots and torque hardware to 85 lbs-ft.

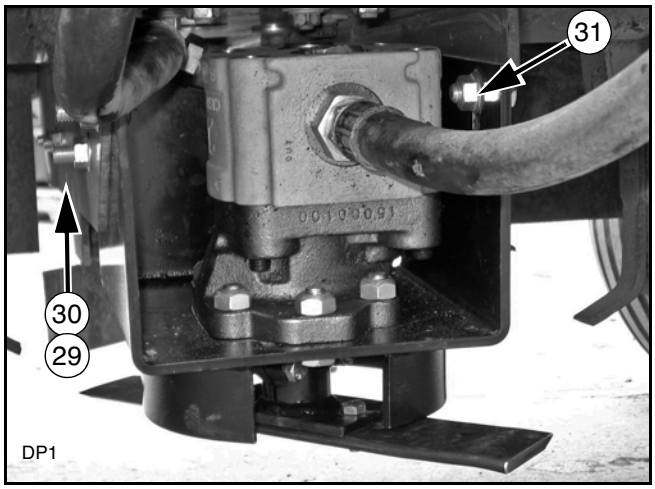


Figure 59. Motor Assembly Installed

Assemble Hoses

1. Attach male quick coupler (17) and adapter (16) to the end of hose (15). Attach tee (12) to the opposite end of hose.
2. Attach male quick coupler (17) and adapter (16) to the end of second hose (15). Attach check valve (14), nipple (13) and tee (12) to the opposite end of hose.

   NOTE: Make sure flow indicator arrow on the side of the check valve (14) is pointing in the correct direction. See Figure 60
3. Install check valve (14) and two nipples (13) between the two tees (12).

   NOTE: Make sure flow indicator arrow on the side of the check valve (14) is pointing in the correct direction.
4. Place hose assembly around center plate of shredder and drape quick couplers over the front of the shredder. See Figure 60 and Figure 61.
5. Make sure hose with check valve is on the right side of the center plate.

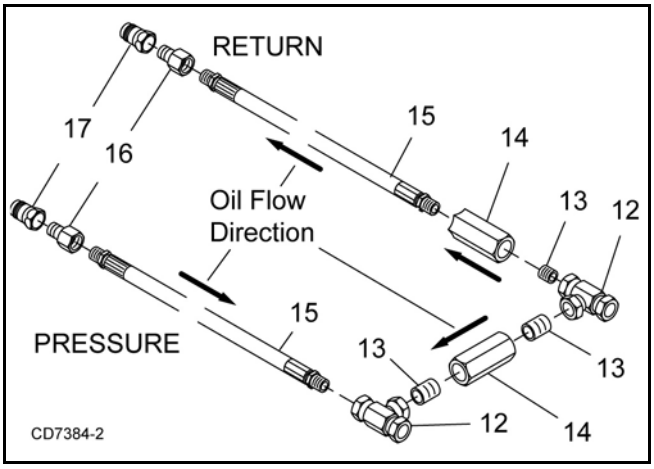


Figure 60. Hose Assembly

6. Route hose (11) from the IN side of the motor between shredder and rockshaft and attach it to tee (12) on the left side of the center plate.
7. Route hose (11) from the OUT side of the motor between shredder and rockshaft and attach it to tee (12) on the right side of the center plate.

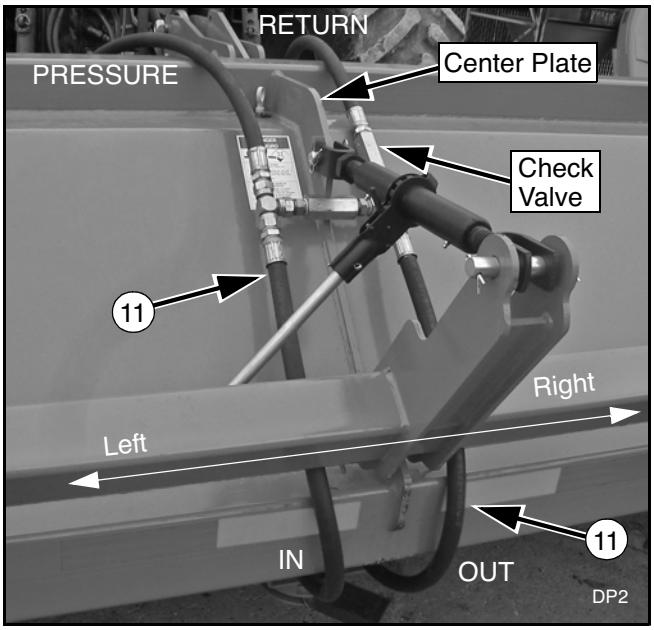
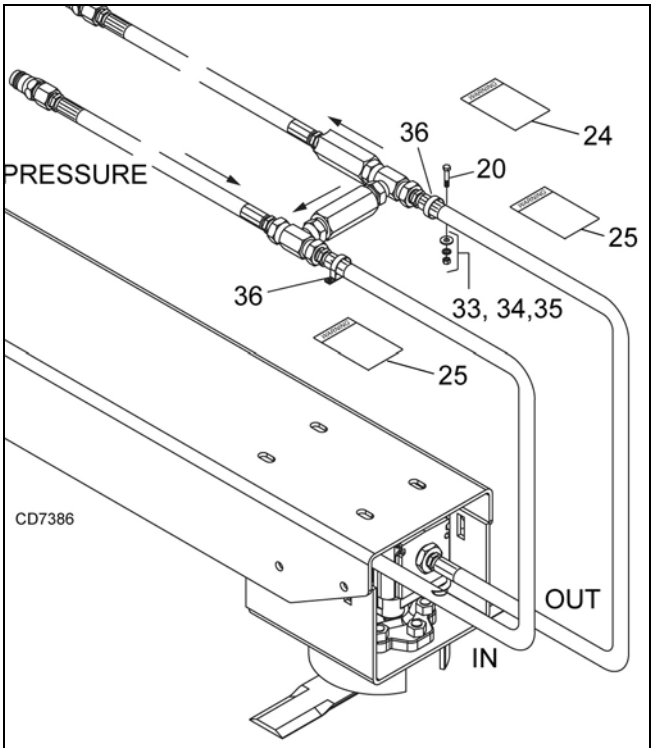


Figure 61. Hose Routing

Install Hose Clamps

1. Place hose clamps (36) around hoses (11) and center hoses between center plate.
2. Mark clamp holes in desired location on shredder body and drill two 11/32" holes.
3. Secure hose clamps to shredder using 5/16 NF x 1-1/4 cap screws (20), flat washers (33), lock washers (34) and hex nuts (35). See Figure 62.



20.	66	5/16 NF x 1-1/2 HHCS GR5
24.	50530315	Decal, Hydraulic Pressure
25.	50530263	Decal, Rotating Blades
33.	4378	5/16 Flat Washer
34.	2472	5/16 Lockwasher
35.	5283	5/16 NF Hex Nut
36.	1004695	Clamp, 1.94 Dia pipe

Figure 62. Hose Clamp Installation

Connect Hoses to Tractor

NOTICE

■ **Oil flow to hydraulic motor must not exceed 28 gpm.**

1. Connect PRESSURE hose to a tractor rear remote quick coupler that has a lever (handle) that can be placed in the detent or locked position.
2. RETURN hose must be connected directly to the tractor reservoir or to a specifically designated motor return or ‘zero’ back pressure port.

Install Decals

Apply safety decals (24 & 25) to a clean surface on the back of the shredder where they can be seen without obstructions. Install decals (25) on either side of the hose assembly. See Figure 62.

DEALER CHECK LISTS

PRE-DELIVERY CHECK LIST

(DEALER'S RESPONSIBILITY)

Inspect the equipment thoroughly after assembly to make sure that it is set up properly before delivering it to the customer.

The following check lists are a reminder of points to inspect. Check off each item as it is found satisfactory or after proper adjustment is made.

___ Check that all safety decals are installed and in good condition. Replace if damaged.

___ Properly attach implement to tractor and make all necessary adjustments.

___ Check all bolts to be sure they are properly torqued.

___ Check wheel bolts for proper torque.

___ Check that all cotter pins and safety pins are properly installed. Replace if damaged.

___ Check and grease all lubrication points as identified in . Lubrication Points, page 26.

DELIVERY CHECK LIST

(DEALER'S RESPONSIBILITY)

___ Show customer how to make adjustments.

___ Instruct customer how to lubricate and explain the importance of lubrication.

___ Point out the safety decals. Explain their meaning and the need to keep them in place and in good condition. Emphasize the increased safety hazards when instructions are not followed.

___ Present Operator's Manual and request that customer and all operators read it before operating equipment. Point out the manual safety rules, explain their meanings and emphasize the increased safety hazards that exist when safety rules are not followed.

___ Explain to customer the potential crushing hazards of going underneath raised equipment. Instruct customer that service work does not require going underneath unit and never to do so.

___ Show customer the safe, proper procedures to be used when mounting, dismounting, and storing equipment.

___ For mounted units, add wheel weights, ballast in front tires, and/or front tractor weight to enhance front end stability. A minimum 20% of tractor and equipment gross weight must be on front tractor wheels. When adding weight to attain 20% of tractor and equipment weight on front tractor wheels, you must not exceed the ROPS weight certification. Weigh the tractor and equipment. Do not estimate!

___ Make customer aware of optional equipment available so that customer can make proper choices as required.

NOTES

FLAIL SHREDDER

Center Drive

FRAME ASSEMBLY . . . . . 50 - 51

FLAIL TUBE ASSEMBLY 52

STRUT AND CASTER ASSEMBLY 53

SAFETY LIGHT KIT. . . . . 54 - 55

WEASLER PTO SHAFT WITH TORQMASTER CLUTCH . . . . . 56 - 58

WEASLER 24K TORQMASTER CLUTCH 59

WEASLER 30K AUTOMATIC CLUTCH 60

WEASLER PTO SHAFT WITH AUTOMATIC CLUTCH . . . . . 61 - 62

CENTER DRIVE GEARBOX ASSEMBLY 63

RUBBER BELTING 64

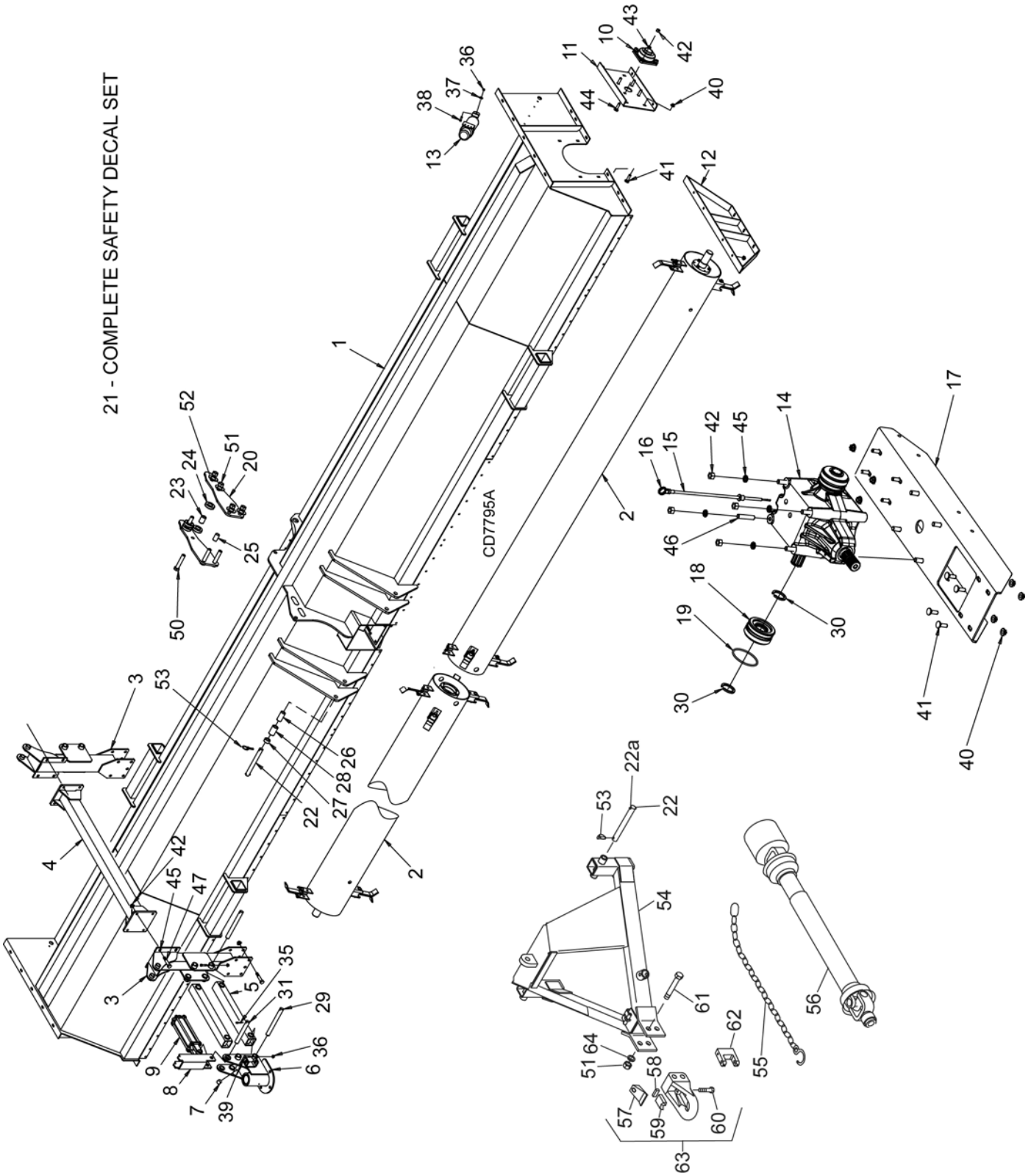
CENTER DEFLECTOR 65

HYDRAULIC HOSE ASSEMBLY 65

RUBBER FLAPS 66

CENTER CUTTER KIT (OPTIONAL) 67

CENTER DRIVE FLAIL SHREDDER FRAME ASSEMBLY



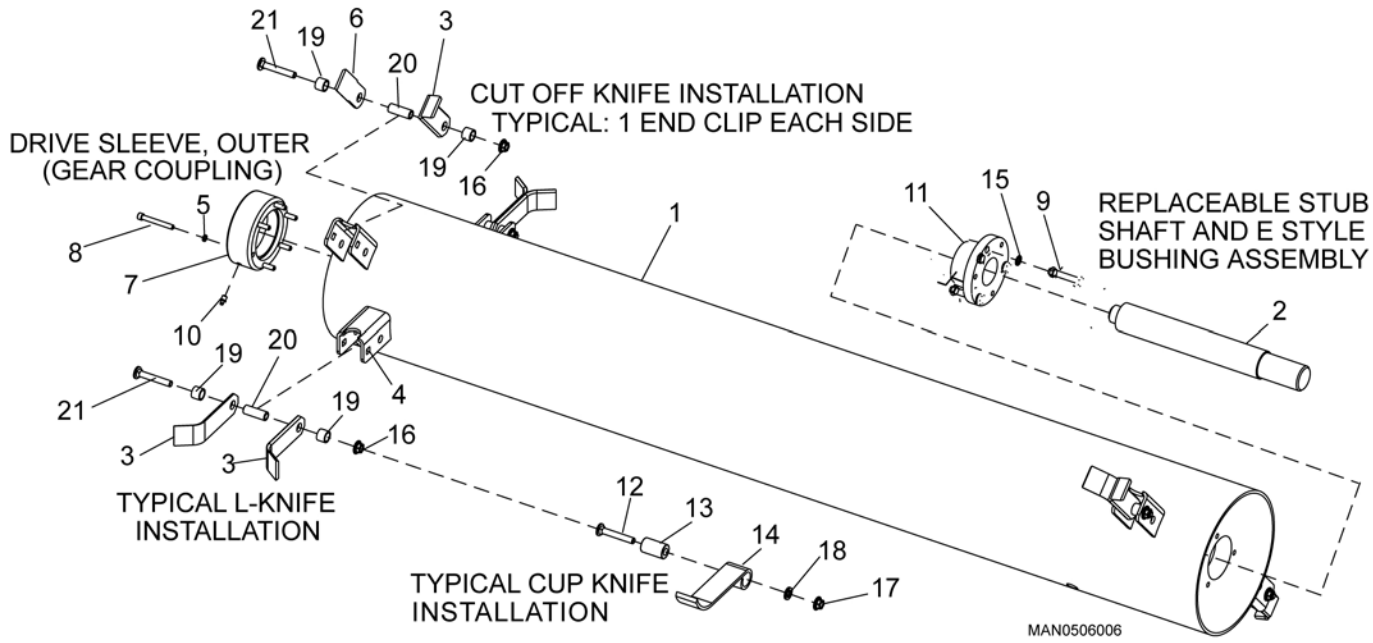
CENTER DRIVE FLAIL SHREDDER FRAME ASSEMBLY PARTS LIST

REF	PART		QTY	DESCRIPTION
1	NSS		1	S20CD Shredder Body
	NSS		1	S22CD Shredder Body
	NSS		1	S25CD Shredder Body
	NSS		1	S27CD Shredder Body
1	NSS		1	S30CD Shredder Body
2	----------		-	Flail tube asy, right & left (see page 52)
3	1029365		4	Strut upright asy
4	1029372		2	Strut crossmember
5	1029550		8	Pivot Tube
6	1029554		4	Pivot Assembly
7	7144		4	Rubber Bumper
8	1004814		4	Transport Lock-Up
9	29547		4	3 x 8 Standard Cylinder
10	1012170		2	Bearing, 2-3/16 Flange
11	1010120		2	Bearing Plate
12	1013067		2	Skid Weldment
13	1003828		1	Manual Tube
14	1013049		1	Gearbox Assembly (see page 56)
15	1030513		1	Dipstick Tube
16	90315407		1	Dipstick
17	1012175		1	Gearbox mounting channel
18	50030338		2	Inner Drive Hub - splined
19	90109126		2	O-ring, flail coupler
20	1013114		2	Upper mast plate
21	1019755		1	Safety decal set
22	20020553		2	Lower 3-point pin assembly
22a	90029204	*	1	5/16 x 1-5/8 Roll pin
23	1016186		2	Bushings, hardened
24	1016187		4	Mast spacer
25	20030151		1	Mast spacer bushing
26	20030961		4	Spacer, 1-7/16 OD
27	20030960		4	Spacer, 1-3/4 OD
28	20030959		4	Spacer, 1-3/4 OD
29	1020013		16	Pin, 1-1/4 x 7.08
30	90039030		4	Snap ring, 1-3/4
31	37431		8	Pin, 1.0 x 6.10
35	923		16	1/4 x 1-3/4 Cotter Pin

REF	PART	QTY	DESCRIPTION
36	6698	17	3/8 NC Lock Nut
37	565	2	3/8 Flat Washer
38	20973	2	3/8 NC x 1-1/4 Carriage Bolt, GR5
39	2290	16	3/8 NC x 2-1/2 HHCS GR5
40	11900	16	1/2 NC Flange Lock Nut
41	12735	16	1/2 NC x 1-3/4 Carriage Bolt, GR5
42	19025	18	5/8 NC Flange Lock Nut
43	1286	8	5/8 Washer Lock
44	2855	8	5/8 NC x 2 Carriage Bolt, GR5
45	57817	20	5/8 Hardened Washer
46	50530313	4	5/8 NC x 2-3/4 Stud Bolts, GR5
47	902	16	5/8 NC x 2 HHCS, GR5
48	302207	20	3/4 NC Lock Nut
49	29315	20	3/4 NC x 5-1/2 HHCS, GR5
50	34278	5	1" NC x 5 HHCS, GR5
51	34279	5	1" NC Hex Nut
52	832	10	1" Standard Washer
53	27542	2	7/16 x 2 Klik Pin
54	1032113	1	Pull-type hitch, 30’
55	19407	1	Tow chain, 10,000 Lbs
56	1016105	1	3-Point PTO shaft, 1-3/4 yoke with clutch (see page 58) S20CD, S22CD, S25CD, S27CD
56	1026555	1	3-Point PTO shaft, 1-3/4 yoke with clutch (see page 61) S30CD
56	1016109	1	Pull-type PTO shaft, 1-3/4 yoke with clutch (see page 57) S20CD, S22CD, S25CD, S27CD
56	1019820	1	Pull-type PTO shaft, 1-3/4 yoke with clutch (see page 62) S30CD
57	50530834	1	Top plate
58	50530832	1	Cushion
59	50530833	1	V-Plate
60	90001411	2	3/4 NC x 3 Hex bolt GR5
61	90001537	2	1 NC x 6-1/2 Hex bolt GR5
62	50520433	1	Clevis hitch kit
63	50530831	1	Hitch, Cat 3 complete (Items 57-60)
64	90011021	2	1" Lock washer

HHCS	Hex Head Cap Screw
NSS	Not Sold Separately
*	Standard hardware; obtain locally

FLAIL TUBE ASSEMBLY

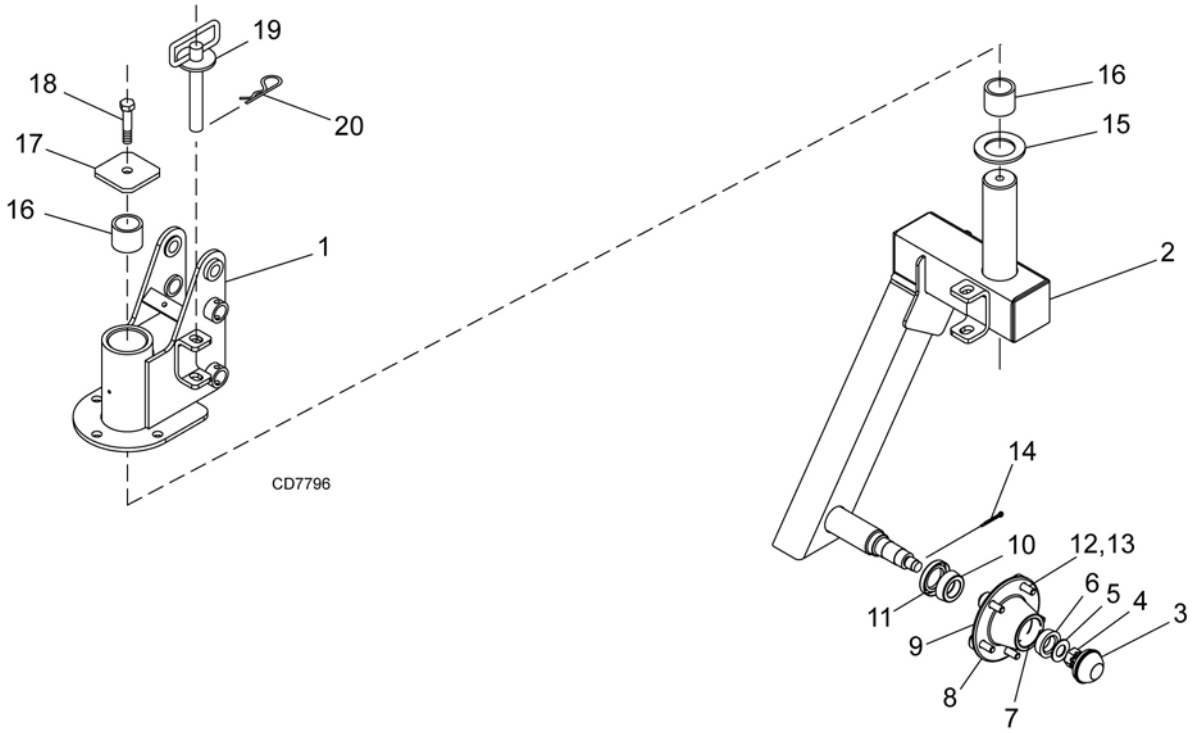


REF	LEFT PART #	RIGHT PART #	QTY	DESCRIPTION
1	1013109LK	1013108LK	1	20' Flail tube w/knives
1	1013109HD	1013108HD	1	20' HD Cotton tube w/knives
1	1013109CP	1013108CP	1	20' Cup knife tube w/knives
1	1016179LK	1016178LK	1	22' Flail tube w/knives
1	1016179HD	1016178HD	1	22' HD Cotton tube w/knives
1	1016179CP	1016178CP	1	22' Cup knife tube w/knives
1	1012169LK	1012168LK	1	25' Flail tube w/knives
1	1012169HD	1012168HD	1	25' HD Cotton tube w/knives
1	1012169CP	1012168CP	1	25' Cup knife tube w/knives
1	1013119LK	1013118LK	1	27' Flail tube w/knives
1	1013119HD	1013118HD	1	27' HD Cotton tube w/knives
1	1013119CP	1013118CP	1	27' Cup knife tube w/knives
1	1029355LK	1029354LK	1	30' Flail tube w/knives
1	1029355HD	1029354HD	1	30' HD Cotton tube w/knives
1	1029355CP	1029354CP	1	30' Cup knife tube w/knives

REF	PART		QTY	DESCRIPTION
2	1012163		2	Stub shaft, 2-3/16"
3	50531067		AR	L-Knife, long 8-1/2", (6 mm)
3	1019788		AR	L-Knife, HD cotton (Durafaced) (8 mm)
4	50531048		AR	Weld-on clip
5	50030779		12	3/8 High collar lock washer
6	1010056		AR	L- Knife, cut off
6	1019789		AR	L- Knife, cut off
7	50030345		2	Drive hub sleeve, outer
8	1013092		12	3/8 NC x 2-1/2 SHCS
9	90002526		6	1/2 NC x 2-3/4 Tap bolt, full thread
10	90515001	*	2	1/8 NPT Straight grease fitting
11	1012164		2	2-7/16 Hub, E-style
12	90001357	*	AR	5/8 NC x 3-1/2 Hex bolt GR5
13	50530405		AR	Hardened wear bushing
14	1022607		AR	Steel cup flail 8-1/2" (Standard)
14	1022606		AR	Steel cup flail 7-1/2"
14	1022605		AR	Steel cup flail short 6-3/16"
15	90011013	*	AR	1/2 Lock washer
16	11900	*	AR	1/2 NC Flange lock nut
17	90006508		AR	5/8 NC Top lock nut
18	90011015	*	AR	5/8 Lock washer
19	1010061		AR	Spacer, steel (for 6 mm L-knife)
19	1012184		AR	Spacer, steel (for 8 mm L-knife)
20	1010062		AR	Bushing, L-knife
21	90001758	*	AR	1/2 NC x 3-1/4 Carriage bolt

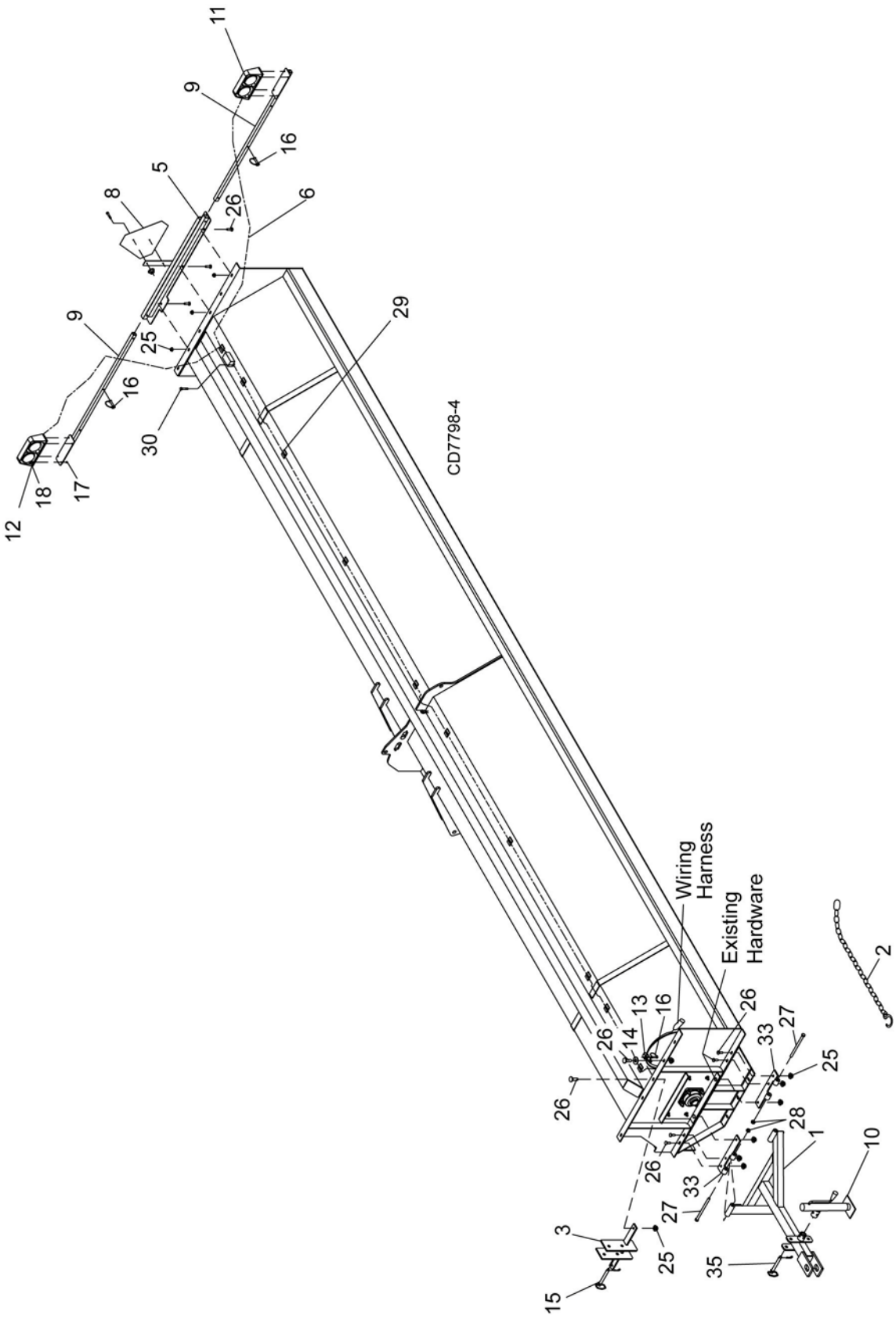
SHCS	Socket Head Cap Screw
NS	Not Shown
AR	As Required
*	Standard hardware, obtain locally

STRUT AND CASTER ASSEMBLY



REF	PART NO	QTY	DESCRIPTION
1	1029554	4	Caster Pivot Assembly
2	1030508	4	Caster Assembly
3	90509009	4	Dust Cap
4	20378	4	7/8 NF Slotted Nut
5	28539	4	7/8 Washer
6	2303	4	Bearing Cone
7	90101016	4	Bearing Cup
8	90509003	4	Hub, 5-Bolt
9	90101022	4	Bearing Cup
10	2717	4	Bearing Cone
11	90109002	4	Seal
12	90509117	20	1/2 NF x 1-7/8 Wheel Stud
13	90509011	20	1/2 NF Wheel Nut
14	1266	4	3/16 x 1-1/2 Cotter Pin
15	20031233	4	Oilite Washer
16	20031766	8	Bearing, Caster Pivot
17	20031219	4	Retainer Pin
18	90001221	4	1/2 NF x 1 HHCS, GR5
19	90025030	2	3/4 x 6 Hitch Pin
20	22411	4	3/16 Klik Pin
N/S	90509070	4	Tire, 9.5L x 15
N/S	90509078	4	Wheel Rim 15 x 6, 5-Bolt
	N/S		Not Shown
	HHCS		Hex Head Cap Screw
		*	Standard Hardware, Obtain Locally

END TOW AND SAFETY LIGHT ASSEMBLY

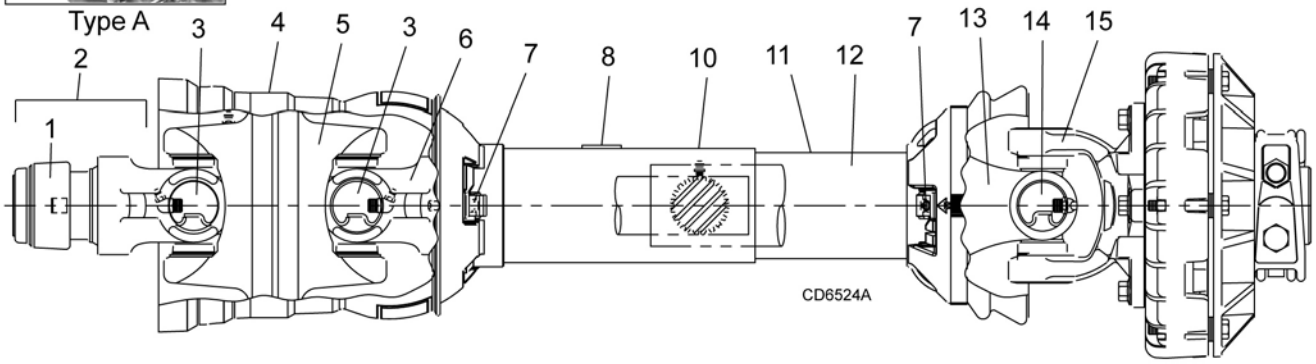


END TOW ASSEMBLY AND SAFETY LIGHT PART LIST

REF	PART		QTY	DESCRIPTION
1	1023125		1	Hitch
2	19407		1	Tow Chain, 10,000 lbs
3	1029565		1	Tongue Lock-Up
5	1019834		1	Light Mount
6	90401151		1	Wire Harness
7	90507121		12	Adhesive Back Clamp
8	24611		1	Slow Moving Vehicle Sign
9	50520563		2	Dual Safety Light Arm
10	23790		1	Jack, 2000 lbs
11	90401149		1	Left Dual Lamp
12	90401150		1	Right Dual Lamp
13	56148		1	Hose Bracket
14	854	*	1	1/2 Flat Washer
15	90025030		1	3/4 x 6 Hitch Pin
16	90025028		3	3/8 x 1-3/4 Pin
17	62521	*	8	1/4 NC Flange Locknut
18	10378	*	8	1/4 NC x 1" HHCS
25	11900	*	9	1/2 NC Flange Lock Nut
26	90001751	*	9	1/2 NC x 1-1/2 Carriage Bolt, GR5
27	90001381	*	2	5/8 NC x 9 HHCS, GR5
28	19025	*	2	5/8 NC Flanged Lock Nut
29	90507121		12	Adhesive Backed Clamp
30	30036	*	4	5/16 NC x 3/4 Self Tapping Screw
33	1019831		2	Lower Mount - End Transport
	HHCS			Hex Head Cap Screw
		*		Standard Hardware - Obtain Locally

TYPE A - WEASLER® 24K PULL-TYPE PTO SHAFT WITH TORQMASTER CLUTCH
S20CD, S22CD, S25CD, S27CD PULL-TYPE MODELS

Note 1: Two types of Weasler Drives are used. See photo to determine type.
Note 2: Lube fitting in center of cross and bearing.



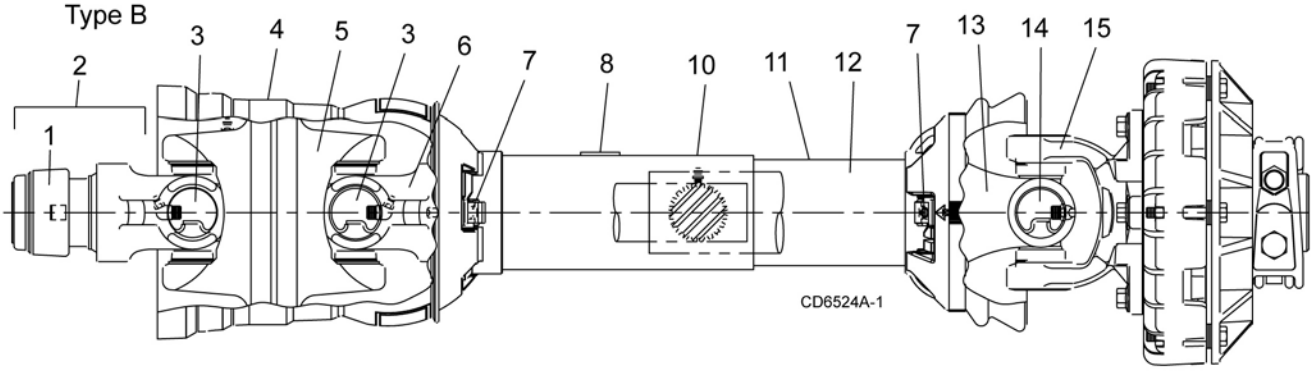
REF	PART	QTY	DESCRIPTION
1	19837	1	Slide lock repair kit 1.75 ID
2	90318121	1	Slide lock yoke asy 1.75 ID
3	58759	2	Cat 6 CV U-joint repair kit
4	19840	1	CV Bell shield
5	58760	1	CV Body with fitting
6	90318183	1	Yoke & shaft 26.8
7	19846	2	Shield bearing repair kit
8	18864	1	Safety sign
9	55648	1	Centralizer repair kit (not shown)

REF	PART	QTY	DESCRIPTION
10	1010819	1	Outer guard & bearing
11	1010820	1	Inner guard & bearing
12	33347	1	Decal, Danger, Guard missing
13	90317909	1	Yoke, tube & slip sleeve
14	58765	1	U-joint cross & bearing kit
15	1010805	1	Clutch asy, 55 clamp 24k
A	1016109	1	PTO CV 1.75-20 CD P-type 24KE
B	1016125	1	Tractor half with guard 1.75

TYPE B - WEASLER® 24K PULL-TYPE PTO SHAFT WITH TORQMASTER CLUTCH
S20CD, S22CD, S25CD, S27CD PULL-TYPE MODELS

Type B

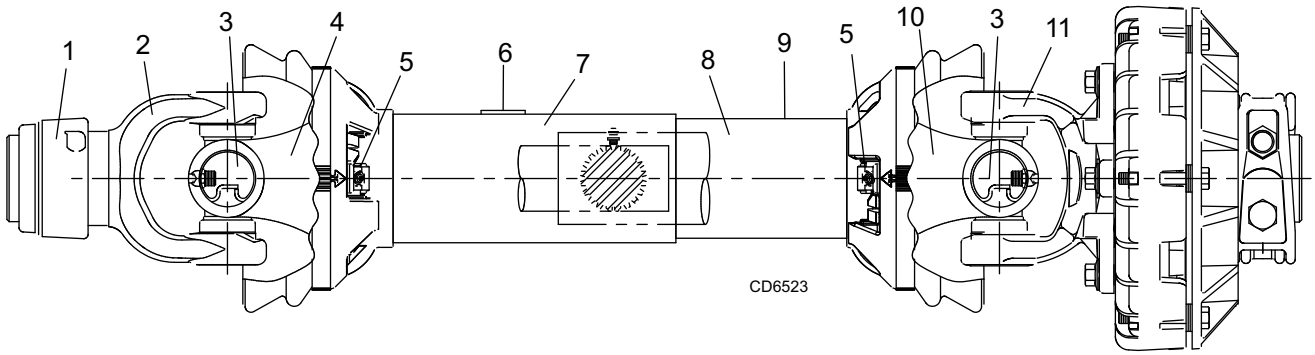
Note 1: Two types of Weasler Drives are used. See photo to determine type.
Note 2: Lube fitting at end of cross and bearing.



REF	PART	QTY	DESCRIPTION
A	1016109	1	PTO complete 1-3/4 20 spline
1	19837	1	Slide lock repair kit 1.75 ID
2	1033105	1	Slide lock yoke asy 1.75 ID
3	1033107	2	Cat 6 CV U-joint repair kit
4	19840	1	CV Bell shield
5	1033106	1	CV Body with fitting
6	1033109	1	Yoke & shaft
7	19846	2	Shield bearing repair kit
8	18864	1	Safety sign
9	55648	1	Centralizer repair kit (not shown)

REF	PART	QTY	DESCRIPTION
10	1010819	1	Outer guard & bearing
11	1010820	1	Inner guard & bearing
12	33347	1	Decal, Danger, Guard missing
13	90317909	1	Yoke, tube & slip sleeve
14	58765	1	U-joint cross & bearing kit
15	1010805	1	Clutch asy, 55 clamp 24k
A	1016109	1	PTO CV 1.75-20 CD P-type 24KE
B	1016125	1	Tractor half with guard 1.75

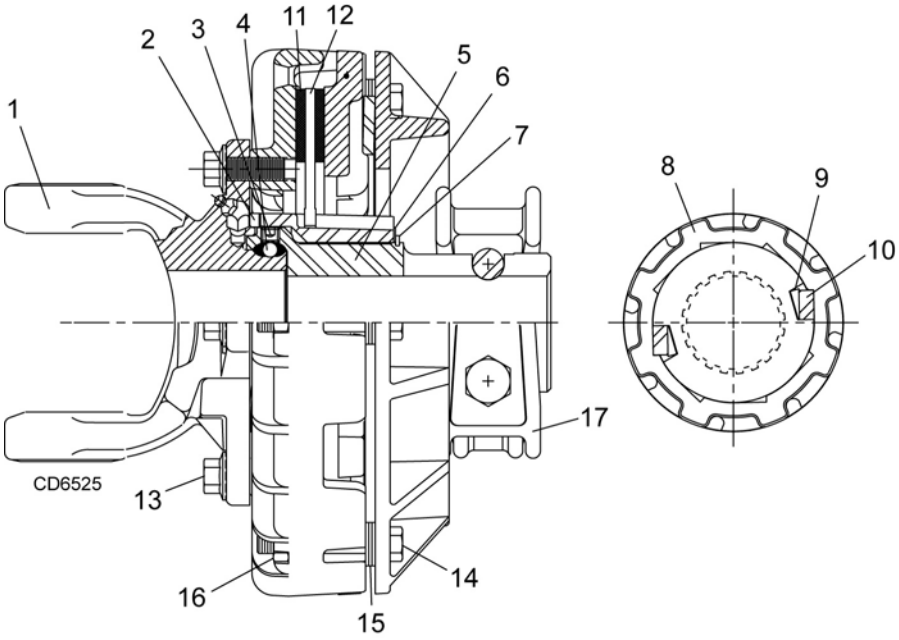
WEASLER® 24K 2-POINT & 3-POINT PTO SHAFT WITH TORQMASTER CLUTCH
S20CD, S22CD, S25CD, S27CD 3-POINT MODELS

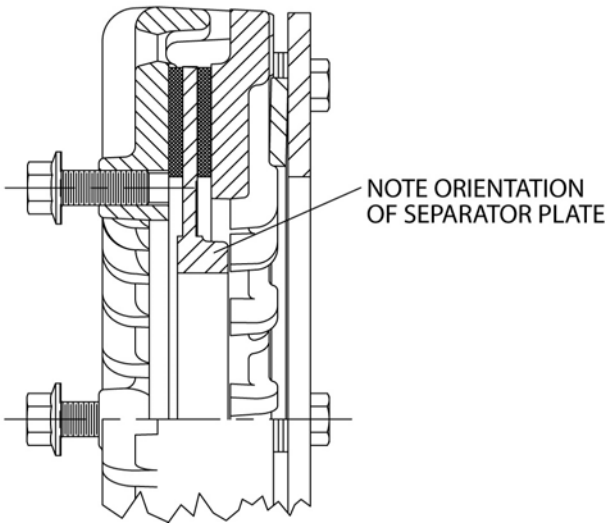


REF	PART	QTY	DESCRIPTION
1	19837	1	Slide lock repair kit 1.75 ID
2	90317418	1	Slide lock yoke asy 1.75 ID
3	1016113	2	U-joint cross & bearing kit
4	90318183	1	Yoke & shaft 26.8 center-end **-or-**
4	90318074	1	Yoke & shaft 32.9 center-end
5	19846	1	Shield bearing repair kit
6	18864	1	Safety sign
7	1010803	1	Outer guard & bearing (1016117, 1016111) **-or-**
7	1010813	1	Outer guard & bearing (1016122, 1016124)
8	1010804	1	Inner guard & bearing
9	33347	1	Safety sign, Danger, Guard missing

REF	PART	QTY	DESCRIPTION
10	90317724	1	Yoke, tube & slip sleeve
11	1010805	1	Friction overrunning clutch asy. 55 clamp (24k)
A	1016105	1	PTO Shaft complete 1-3/4-20 CD Std
B	1016107	1	PTO Shaft complete 1-3/4-20 CD Long
C	1016117	1	Tractor half asy w/guard 1-3/4 Std
D	1016124	1	Tractor half asy w/guard 1-3/4 Long
E	1016112	1	Implement half asy w/guard 24k

WEASLER® 24K TORQMASTER CLUTCH ASSEMBLY
S20CD, S22CD, S25CD, S27CD MODELS

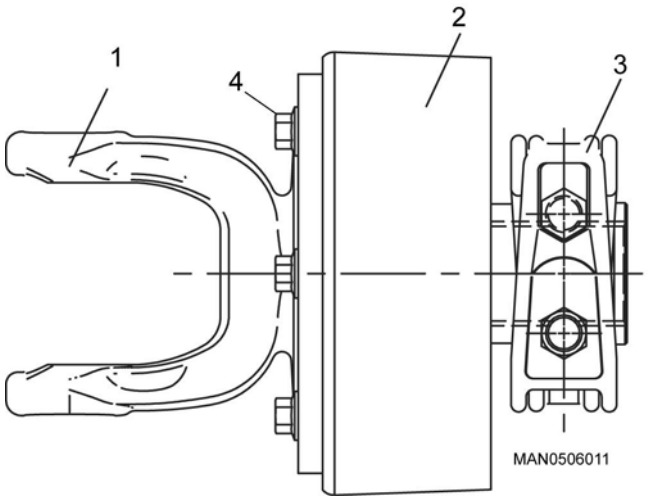




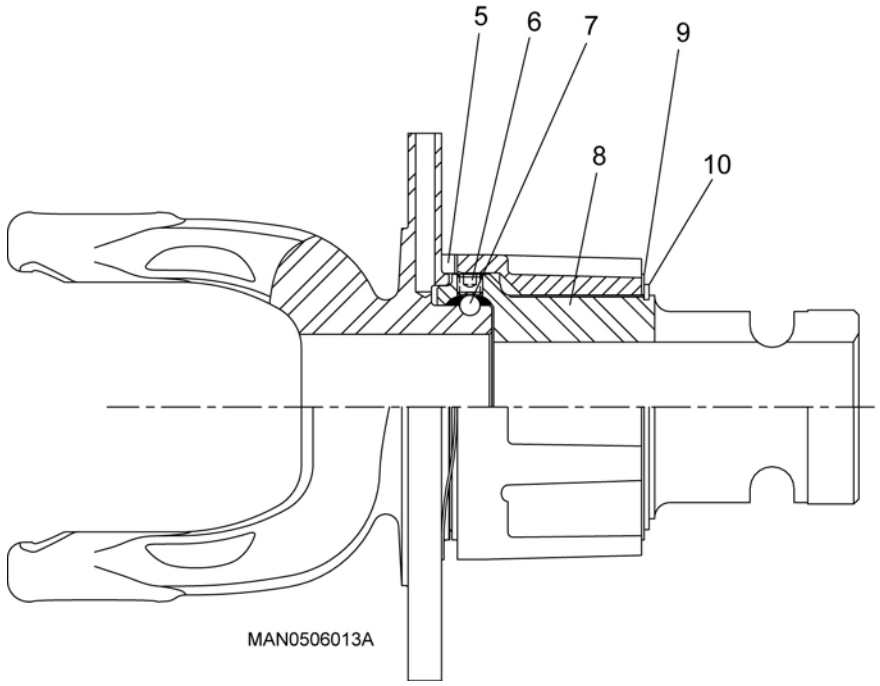
REF	PART	QTY	DESCRIPTION
1	1010831	1	Yoke, Clamp style with overrunning clutch & hub asy (10 mm bolts) (includes Items 2 - 10)
1A	1019629	1	Overrunning clutch repair kit (includes Items 2, 6, 7, 9 & 10)
2	90318165	1	Wave spring
3	90318154	1	Set screw, .312-18 x .25 long
4	90317541	31	Ball, 1/4" dia.
5	1019630	1	OR Inner hub assembly
6	90318167	1	Washer
7	90318168	1	Retaining ring
8	90318169	1	Overrunning hub
9	90318170	1	Leaf spring
10	90318171	1	Overrunning key

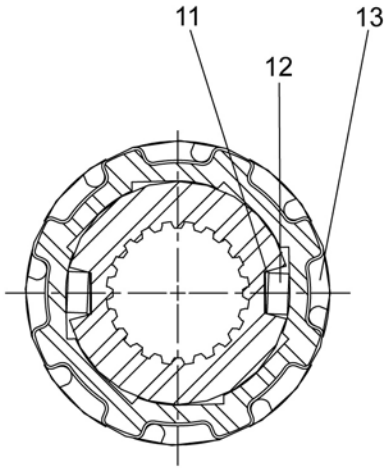
REF	PART	QTY	DESCRIPTION
11	90318175	2	Friction disk
12	90318174	1	Separator plate
13	90003055	4	M10 x 1.50 x 25 Serrated hex head cap screw
14	90003053	6	M8 x 1.25 x 60 Hex bolt, CL 10.9
15	90011236	A/R	Washer, 8 mm x 1.6 thick
16	90006548	6	Nut, M8 x 1.25 Hex, ZP
17	1010833	1	Hub clamp asy, 1.75
A	1010833	1	Friction pack, overrunning (10 mm bolts, 24K)
B	1010805	1	Complete clutch asy, 55 clamp (10 mm bolts, 24K)

WEASLER® AUTOMATIC CLUTCH ASSEMBLY
S30CD,MODELS

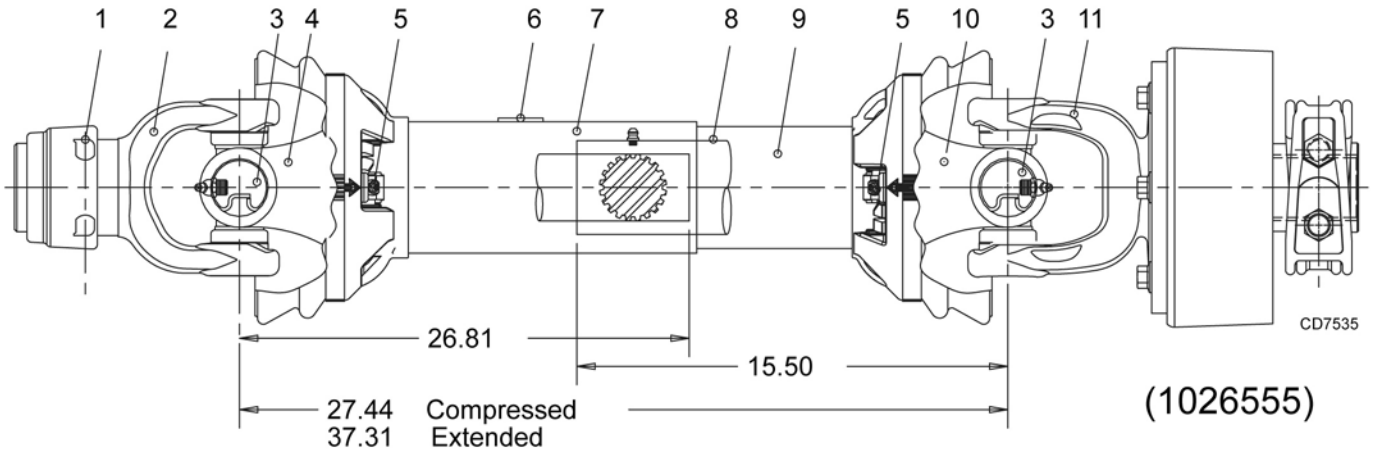


REF	PART NO	QTY	DESCRIPTION
A	1019811	-	Automatic clutch asy complete
1	1019813	1	Yoke & hub, 30K auto
2	1019814	1	Clutch pack, 30K auto
3	1010833	1	Hub clamp assembly 1-3/4
4	1025874	6	HHCS, M12-1.75P x 20 mm CL10.9 flanged head
5	90318165	1	Wave spring
6	90318154	1	Set screw, .312-18 x .25 long
7	90317541	31	Ball, 1/4" dia
8	1019630	1	Overrunning inner hub
9	90318167	1	Washer
10	90318168	1	Retaining ring
11	90318170	2	Leaf spring
12	90318171	2	Overrunning key 1/4 x 1/2 x 1-1/2
13	90318169	1	Overrunning hub
14	1019629	1	Overrunning repair kit (Includes items 5, 9, 10, 11 & 12) (Not shown)



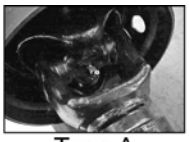


WEASLER® 30K 3-POINT PTO SHAFT WITH AUTOMATIC CLUTCH (OPTIONAL)
S30CD 3-POINT MODELS

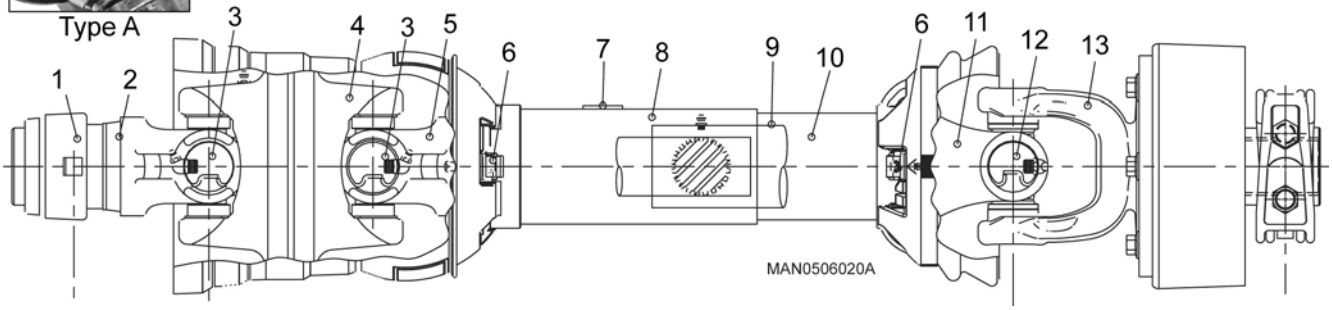


REF	PART	QTY	DESCRIPTION
A	1026555	-	PTO Shaft complete 1-3/4 20-spline 30K 3-point with automatic clutch
1	19837	1	Slide lock repair kit 1.75 ID
2	90317418	1	1-3/4 20-Spline yoke
3	58765	2	U-Joint cross & bearing kit 55E
4	90317613	1	Yoke & shaft, 1.69 20-spline, 30.6 long
	-OR-		-OR-
4	90318183	1	Yoke & shaft, 1.69 20-spline, 26.8 long
5	1009065	2	Drive shield bearing kit
6	90317455	1	Safety sign
7	1010803	1	Outer guard & bearing
8	1010804	1	Inner guard & bearing
9	33347	1	Danger decal, guard missing
10	90317724	1	Yoke, tube & slip sleeve
11	1019811	1	Automatic clutch assembly, 30K (see page 60 for breakdown)

TYPE A - WEASLER® 30K PULL-TYPE PTO SHAFT WITH AUTOMATIC CLUTCH (OPTIONAL)
S30CD PULL-TYPE MODELS


Type A

Note 1: Two types of Weasler Drives are used. See photo to determine type.
Note 2: Lube fitting in center of cross and bearing.

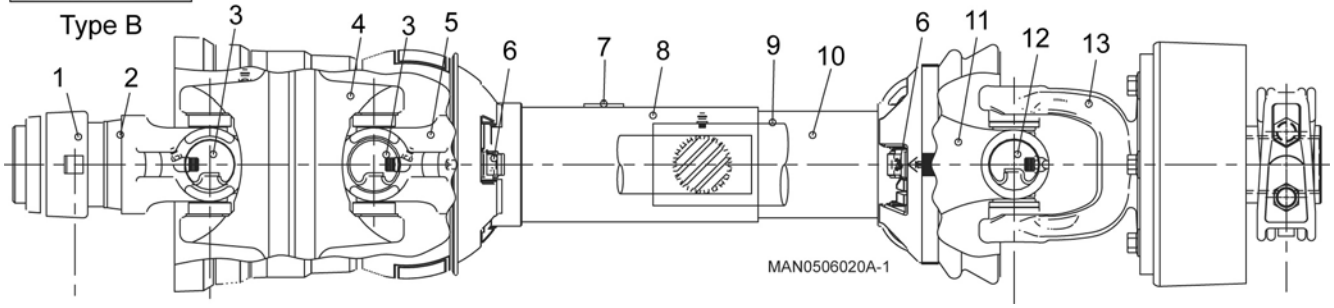


REF	PART	QTY	DESCRIPTION
A	1019820	-	PTO Shaft complete 1-3/4 20-spline 30K pull-type with automatic clutch
1	19837	1	Slide lock repair kit 1.75 ID
2	90318121	1	Slide lock yoke assembly
3	58759	2	CV U-Joint repair kit, 55E
4	58760	1	CV Body with fitting
5	1022641	1	Yoke & shaft (1.69 - 20 spline)
6	1009065	2	Drive shield bearing kit
7	18864	1	Safety sign
8	1022642	1	Outer guard & bearing
9	1022643	1	Inner guard & bearing
10	33347	1	Danger decal, guard missing
11	1022644	1	Yoke, tube & slip sleeve
12	58765	2	U-Joint cross & bearing kit 55E
13	1019811	1	Automatic clutch assembly, 30K (see page 60 for breakdown)

TYPE B - WEASLER® 30K PULL-TYPE PTO SHAFT WITH AUTOMATIC CLUTCH (OPTIONAL) S30CD PULL-TYPE MODELS

Type B

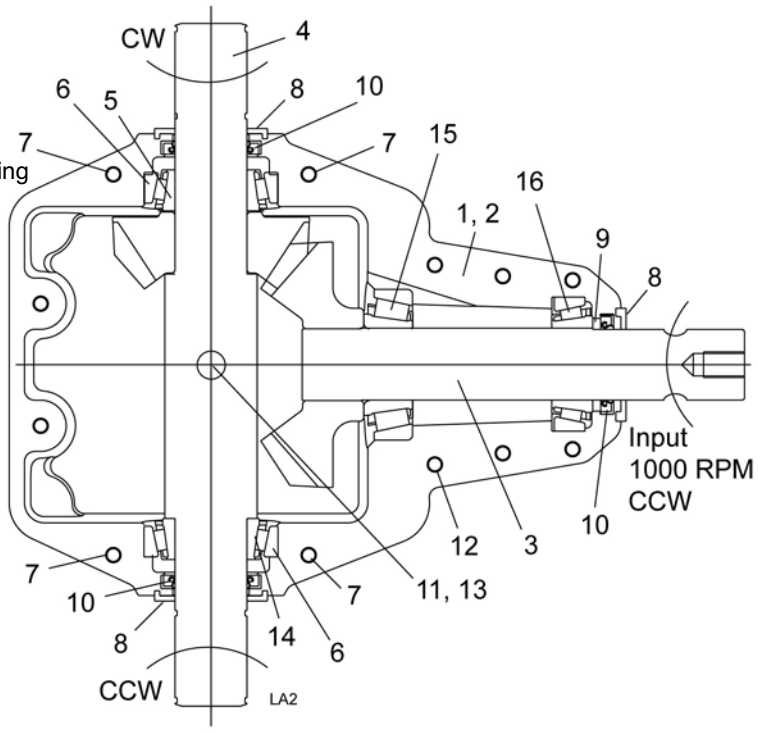
Note 1: Two types of Weasler Drives are used. See photo to determine type.
Note 2: Lube fitting at end of cross and bearing.



REF	PART	QTY	DESCRIPTION
A	1019820	-	PTO Shaft complete 1-3/4 20-spline 30K pull-type with automatic clutch
1	19837	1	Slide lock repair kit 1.75 ID
2	1033105	1	Slide lock yoke assembly
3	1033107	2	CV U-Joint repair kit, 55E
4	1033106	1	CV Body with fitting
5	1033109	1	Yoke & shaft (1.69 - 20 spline)
6	1009065	2	Drive shield bearing kit
7	18864	1	Safety sign
8	1022642	1	Outer guard & bearing
9	1022643	1	Inner guard & bearing
10	33347	1	Danger decal, guard missing
11	1022644	1	Yoke, tube & slip sleeve
12	58765	2	U-Joint cross & bearing kit, 55E
13	1019811	1	Automatic clutch assembly, 30K (see page 60 for breakdown)

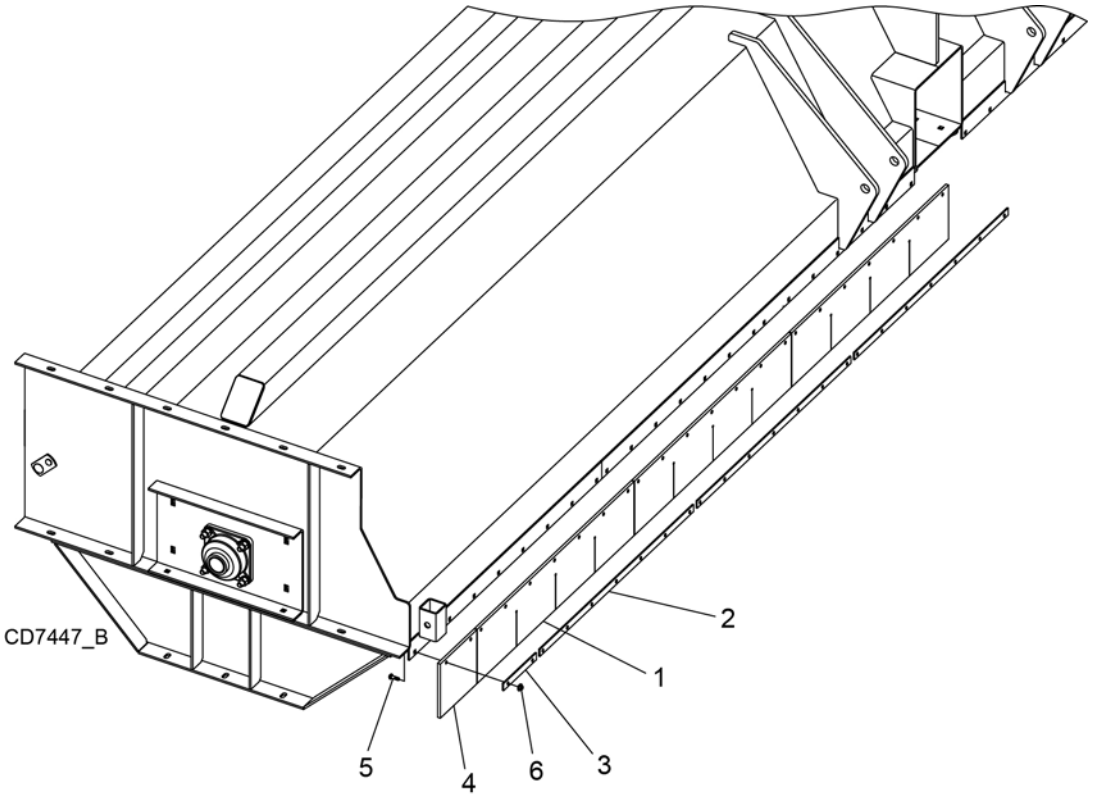
CENTER DRIVE GEARBOX

REF	PART	QTY	DESCRIPTION
A	1013049	1	Complete gearbox, Series 800
1	1019782	1	Casting, Threaded holes
2	1019783	1	Casting, Non-threaded holes
3	1019784	1	Pinion shaft/gear asy 27T with bearing cones & bearing cups
4	90315546	1	Cross shaft/gear asy 20T
5	90101150	1	Bearing cone
6	90101152	2	Bearing cup
7	1019785	4	Bolt, 3/8-16 x 2.75 SHCS
8	1019787	3	Guard, seal
9	90039030	1	Snap ring 1.750
10	90109125	3	Seal TC-1.750-2.437-.312
11	90503078	2	Plug, 1/2-14 NPT SCHD W/3M
12	90003033	8	Bolt, 3/8-16 x 2.25 SHCS
13	90501159	1	Bushing, 1/2 NPT to 1/8 NPT
14	90101328	1	Bearing cone
15	NSS	-	Bearing cone (included in item 3)
16	NSS	-	Bearing cone (included in item 3)
	NSS		Not Serviced Separately



NOTE: To separate gearbox halves for servicing, seal guards (8) must be removed first otherwise damage to gearbox housings will occur. Seal guards can be removed by gently prying out of housing with a flat blade screwdriver using the cutout areas machined in the housing to get behind the guards. Use care not to bend guards during removal so they can be reused for reassembly. Replace guards if they are damaged.

RUBBER BELTING

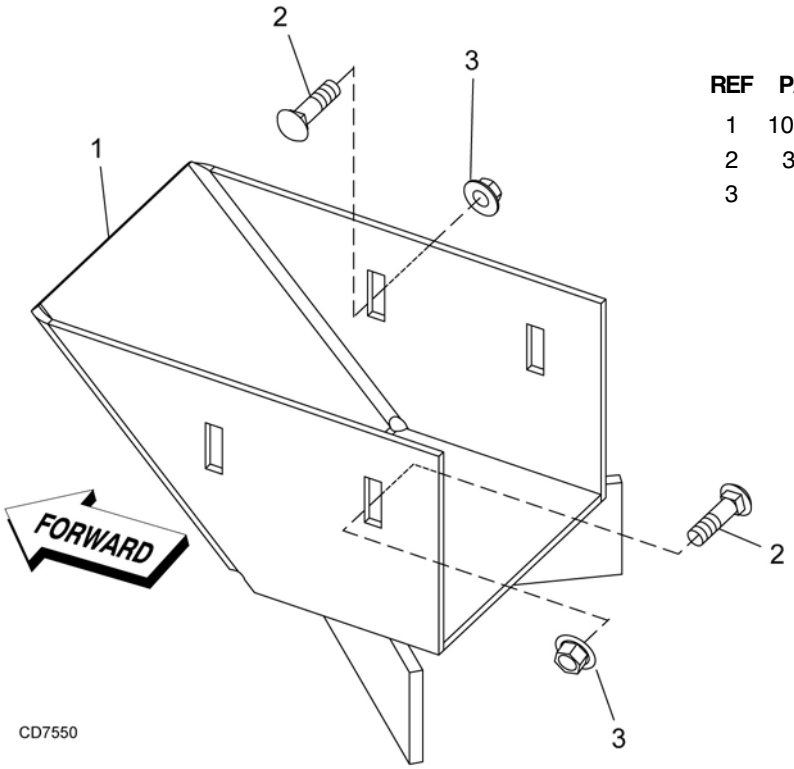


REF	PART	QTY	DESCRIPTION
1	1012202	6	Rubber belting (20 ft & 22 ft)
1	1012202	8	Rubber belting (25 ft & 27 ft)
1	1012202	8	Rubber belting (30 ft)
2	1022647	6	Belt bar (20 ft & 22 ft)
2	1022647	8	Belt bar (25 ft & 27 ft)
2	1022647	8	Belt bar (30 ft)
3	1022648	2	Belt bar (20 ft)
3	1022650	2	Belt bar (22 ft)
3	1022649	2	Belt bar (27 ft)
3	1029560	2	Belt bar (30 ft)
4	1016195	2	Rubber belting (20 ft)
4	1019763	2	Rubber belting (22 ft)
4	1016188	2	Rubber belting (27 ft)
4	1029561	2	Rubber belting (30 ft)

REF	PART		QTY	DESCRIPTION
5	64824	*	46	3/8 NC x 1-1/2 Carriage bolt (20 ft)
5	64824	*	50	3/8 NC x 1-1/2 Carriage bolt (22 ft)
5	64824	*	62	3/8 NC x 1-1/2 Carriage bolt (25 ft)
5	64824	*	34	3/8 NC x 1-1/2 Carriage bolt (27 ft)
5	64824	*	70	3/8 NC x 1-1/2 Carriage bolt (30 ft)
6	14350	*	46	3/8 NC flange lock nut (20 ft)
6	14350	*	50	3/8 NC flange lock nut (22 ft)
6	14350	*	26	3/8 NC flange lock nut (25 ft)
6	14350	*	62	3/8 NC flange lock nut (27 ft)
6	14350	*	70	3/8 NC flange lock nut (30 ft)

* Standard hardware, obtain locally

CENTER DEFLECTOR



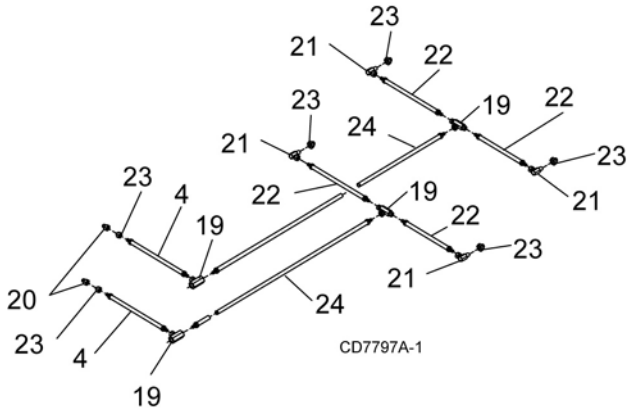
REF	PART		QTY	DESCRIPTION
1	1016151		1	Center deflector
2	301109	*	4	1/2 NC x 1-1/4 Carriage bolt GR5
3	11900	*	4	1/2 NC Flange lock nut

* Standard hardware, obtain locally

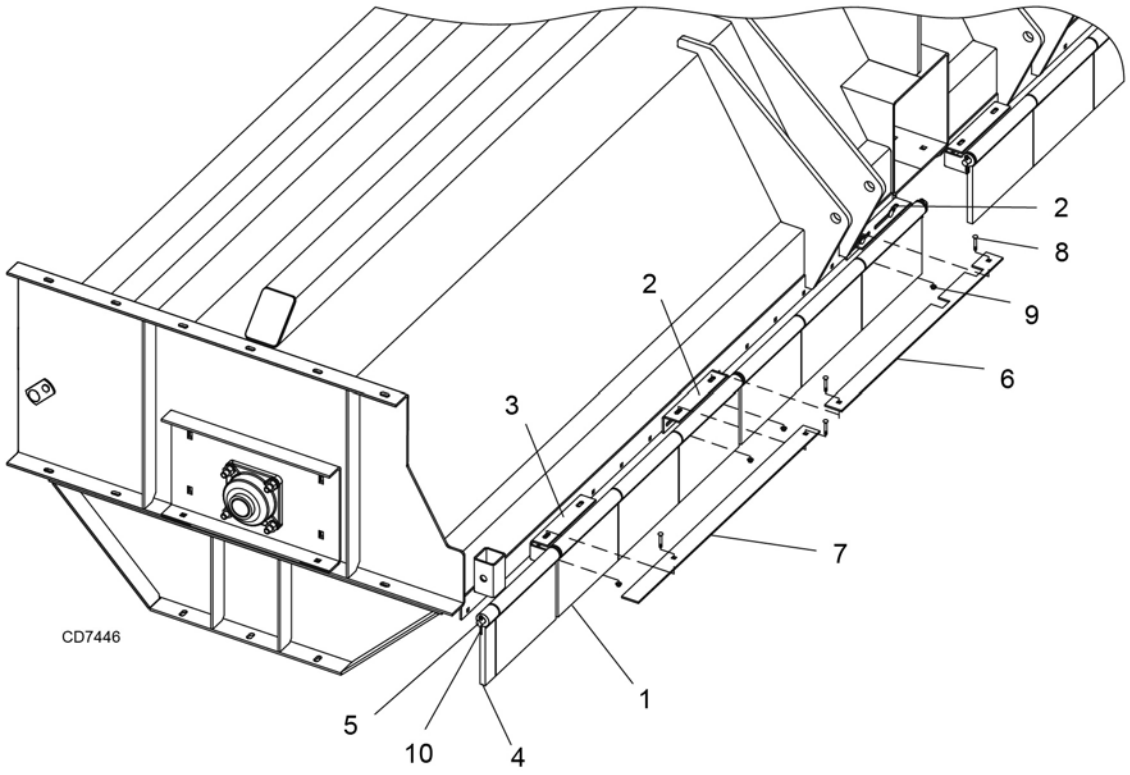
HYDRAULIC HOSE ASSEMBLY

REF	PART		QTY	DESCRIPTION
4	12422		2	Hose, .25 x .25NPT x 90L
19	31239		6	1/4 F Swivel Union Tee
20	66511		2	1/2 NPT Male Coupler
21	8572		8	3/8 x 1/4 x 90° Swivel
22	28522		8	Hose, .25 x .25 NPT x 54L
23	11893		10	1/4 NPTF Adapter
24	31208		4	Hose, .25 x .25 NPT x 124L
31	258	N/S	2	1/2 Feedline Clamp
32	24098	N/S	4	1-1/4 Cylinder Control Set

N/S Not Shown



RUBBER FLAP

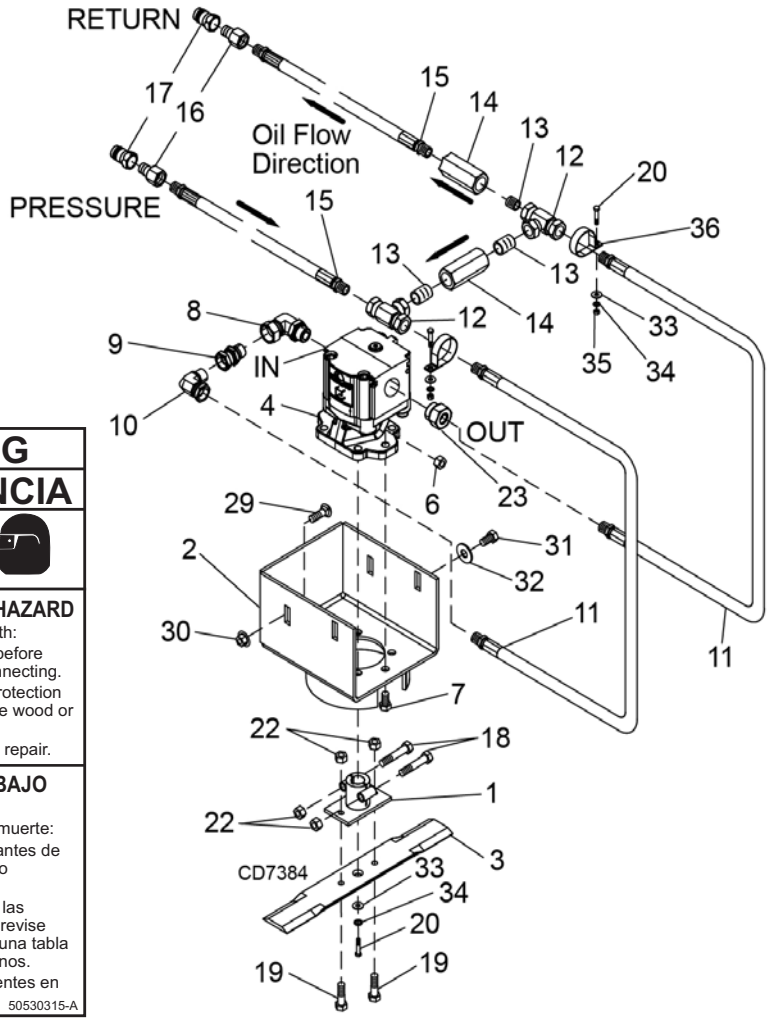


REF	PART	QTY	DESCRIPTION
1	50531089	18	Rubber flap (12" - 20 ft)
1	50531089	20	Rubber flap (12" - 22 ft)
1	50531089	24	Rubber flap (12" - 25 ft)
1	50531089	26	Rubber flap (12" - 27 ft)
1	50531089	30	Rubber flap (12" - 30 ft)
2	1022659	4	Flap bracket, right (20 ft)
2	1022659	5	Flap bracket, right (22 ft & 25 ft)
2	1022659	6	Flap bracket, right (27 ft)
2	1022659	7	Flap bracket, right (30 ft)
3	1022660	3	Flap bracket, left (15 ft)
3	1022660	4	Flap bracket, left (20 ft)
3	1022660	5	Flap bracket, left (22 ft & 25 ft)
3	1022660	6	Flap bracket, left (27 ft)
3	1022660	7	Flap bracket, left (30 ft)
4	1022661	2	Rubber flap (2", 27 ft)
4	1022662	2	Rubber flap (8.5", 20 ft & 22 ft)

REF	PART	QTY	DESCRIPTION
5	1022655	2	Flap rod (20 ft)
5	1022656	2	Flap rod (22 ft)
5	1022657	2	Flap rod (25 ft)
5	1022658	2	Flap rod (27 ft)
5	1029562	2	Flap rod (30 ft)
6	1026528	2	Swing flap bar, mast plate (32" all)
7	1026529	2	Swing flap bar (32", 20 ft, 25 ft, 27 ft)
8	15028 *	28	3/8 NC x 1 Carriage bolt (20 ft)
8	15028 *	32	3/8 NC x 1 Carriage bolt (22 ft)
8	15028 *	36	3/8 NC x 1 Carriage bolt (25 ft)
8	15028 *	40	3/8 NC x 1 Carriage bolt (27 ft)
8	15028 *	70	3/8 NC x 1 Carriage bolt (30 ft)
9	14350 *	28	3/8 NC Flange lock nut (20 ft)
9	14350 *	32	3/8 NC Flange lock nut (22 ft)
9	14350 *	36	3/8 NC Flange lock nut (25 ft)
9	14350 *	40	3/8 NC Flange lock nut (27 ft)
9	14350 *	70	3/8 NC Flange lock nut (30 ft)
10	1266 *	4	3/16 x 1-1/2 cotter pin

* Standard hardware, obtain locally

CENTER CUTTER KIT (OPTIONAL)



24 - 50530315

⚠ WARNING
⚠ ADVERTENCIA

HIGH-PRESSURE FLUID HAZARD
To prevent serious injury or death:
1. Relieve pressure on system before repairing, adjusting, or disconnecting.
2. Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands.
3. Keep all components in good repair.

PELIGRO DE FLUIDO BAJO ALTA PRESION
Para evitar heridas graves o la muerte:
1. Alivie la presión del sistema antes de hacer repara ciones, ajustes o desconecciones.
2. Use protección apropiada en las manos y en los ojos, cuando revise para ver si hay fugas. Utilice una tabla o un cartón en vez de las manos.
3. Mantenga todos los componentes en buen estado.

50530315-A

25 - 50530263

⚠ WARNING
⚠ ADVERTENCIA

ROTATING BLADE HAZARD
To prevent serious injury or death:
1. Stop engine, remove ignition key and wait for moving parts to stop before servicing, repairing, adjusting, inspecting or unplugging.
2. Keep hands and feet away from blades when engine is running.
3. Keep others away.

PELIGRO DE LA CUCHILLAS GIRATORIA
Para evitar heridas graves o la muerte:
1. Para el motor, quite la llave del encendido y espere que las piezas móviles hayan parado antes de dar servicio, hacer reparaciones, ajustes, inspecciones o desatascar.
2. Mantenga lejos de la cuchillas, las manos y los pies cuándo el motor esté en marcha.
3. No permita que otra gente se acerque.

50530263A

REF	PART	QTY	DESCRIPTION
1	1024671	1	Blade hub
2	1016161	1	Motor housing
3	1024674	1	Blade, .31 x 2.50 x 13.31 dbl edge
4	1017719	1	Hydraulic motor
4A	1034644	1	Kit, shaft & bearing (includes shaft, upper & lower bearings and key)
4B	1034635	1	Seal, 30 x 62 x 7
4C	1034636	1	Bearing, ball
4D	1034638	1	Seal, motor body
6	58125 *	6	9/16 NC Lock nut
7	58452 *	6	9/16 NC x 1-1/2 HHCS GR8
8	90503099	1	Elbow, 1-1/16 ORBM x 3/4NPTF
9	27309	1	Adapter, 3/4 NPTF x 3/4 NPTM
10	1023026	1	Elbow, 3/4 NPTM x 3/4 NPTF 90°
11	90506021	2	Hose, 40" x 3/4 NPTM x 3/4 NPTM
12	90503098	2	Tee, 3/4 NPTF
13	90501239	3	Nipple, 3/4 NPTM
14	90503097	2	Check valve, 3/4 NPT
15	90506016	2	Hose, 114" x 3/4 NPTM x 3/4 NPTM

REF	PART	QTY	DESCRIPTION
16	90501303	2	Adapter, 1/2 NPTM x 3/4 NPTF
17	90519003	2	Quick coupler, male
18	90001115 *	2	3/8 NC x 1-3/4 HHCS GR5
19	12169 *	2	3/8 NC x 1-1/4 HHCS GR5
20	66 *	3	5/16 NF x 1-1/2 HHCS GR5
22	14350 *	4	3/8 NC Flange lock nut
23	1023035	1	Adapter, 1-5/16 ORBM x 3/4 NPTF
24	50530315	1	Decal, Hydraulic pressure
25	50530263	2	Decal, Rotating blades
29	301109 *	3	1/2 NC x 1-1/4 Carriage bolt
30	11900 *	4	1/2 NC Flange lock nut
31	25475 *	1	1/2 NC x 1 HHCS GR5
32	854 *	1	1/2 Flat washer
33	4378 *	3	5/16 Flat washer
34	2472 *	3	5/16 Lock washer
35	5283 *	2	5/16 NF Hex nut
36	1004695	2	Clamp, 1.94 dia Pipe

HHCS Hex Head Cap Screw
* Standard hardware, obtain locally

BOLT TORQUE CHART

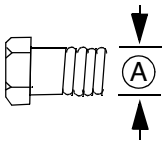
Always tighten hardware to these values unless a different torque value or tightening procedure is listed for a specific application.

Fasteners must always be replaced with the same grade as specified in the manual parts list.

Always use the proper tool for tightening hardware: SAE for SAE hardware and Metric for metric hardware.

Make sure fastener threads are clean and you start thread engagement properly.

All torque values are given to specifications used on hardware defined by SAE J1701 MAR 99 & J1701M JUL 96.



SAE SERIES TORQUE CHART

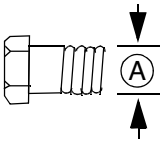
SAE Grade 2 (No Dashes)

SAE Bolt Head Identification

SAE Grade 5 (3 Radial Dashes)

SAE Grade 8 (6 Radial Dashes)

Ⓐ Diameter (Inches)	Wrench Size	MARKING ON HEAD					
		SAE 2		SAE 5		SAE 8	
		lbs-ft	N-m	lbs-ft	N-m	lbs-ft	N-m
1/4"	7/16"	6	8	10	13	14	18
5/16"	1/2"	12	17	19	26	27	37
3/8"	9/16"	23	31	35	47	49	67
7/16"	5/8"	36	48	55	75	78	106
1/2"	3/4"	55	75	85	115	120	163
9/16"	13/16"	78	106	121	164	171	232
5/8"	15/16"	110	149	170	230	240	325
3/4"	1-1/8"	192	261	297	403	420	569
7/8"	1-5/16"	306	416	474	642	669	907
1"	1-1/2"	467	634	722	979	1020	1383



METRIC SERIES TORQUE CHART

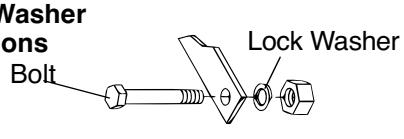
Metric Grade 8.8

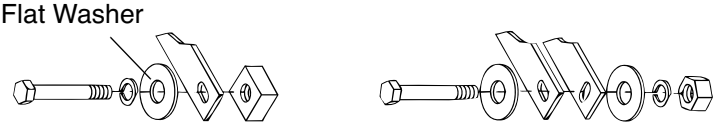
Metric Bolt Head Identification

Metric Grade 10.9

Ⓐ Diameter & Thread Pitch (Millimeters)	Wrench Size	Coarse Thread				Fine Thread				Ⓐ Diameter & Thread Pitch (Millimeters)
		Marking on Head				Marking on Head				
		Metric 8.8		Metric 10.9		Metric 8.8		Metric 10.9		
		N-m	lbs-ft	N-m	lbs-ft	N-m	lbs-ft	N-m	lbs-ft	
6 x 1.0	10 mm	8	6	11	8	8	6	11	8	6 x 1.0
8 x 1.25	13 mm	20	15	27	20	21	16	29	22	8 x 1.0
10 x 1.5	16 mm	39	29	54	40	41	30	57	42	10 x 1.25
12 x 1.75	18 mm	68	50	94	70	75	55	103	76	12 x 1.25
14 x 2.0	21 mm	109	80	151	111	118	87	163	120	14 x 1.5
16 x 2.0	24 mm	169	125	234	173	181	133	250	184	16 x 1.5
18 x 2.5	27 mm	234	172	323	239	263	194	363	268	18 x 1.5
20 x 2.5	30 mm	330	244	457	337	367	270	507	374	20 x 1.5
22 x 2.5	34 mm	451	332	623	460	495	365	684	505	22 x 1.5
24 x 3.0	36 mm	571	421	790	583	623	459	861	635	24 x 2.0
30 x 3.0	46 mm	1175	867	1626	1199	1258	928	1740	1283	30 x 2.0

Typical Washer Installations

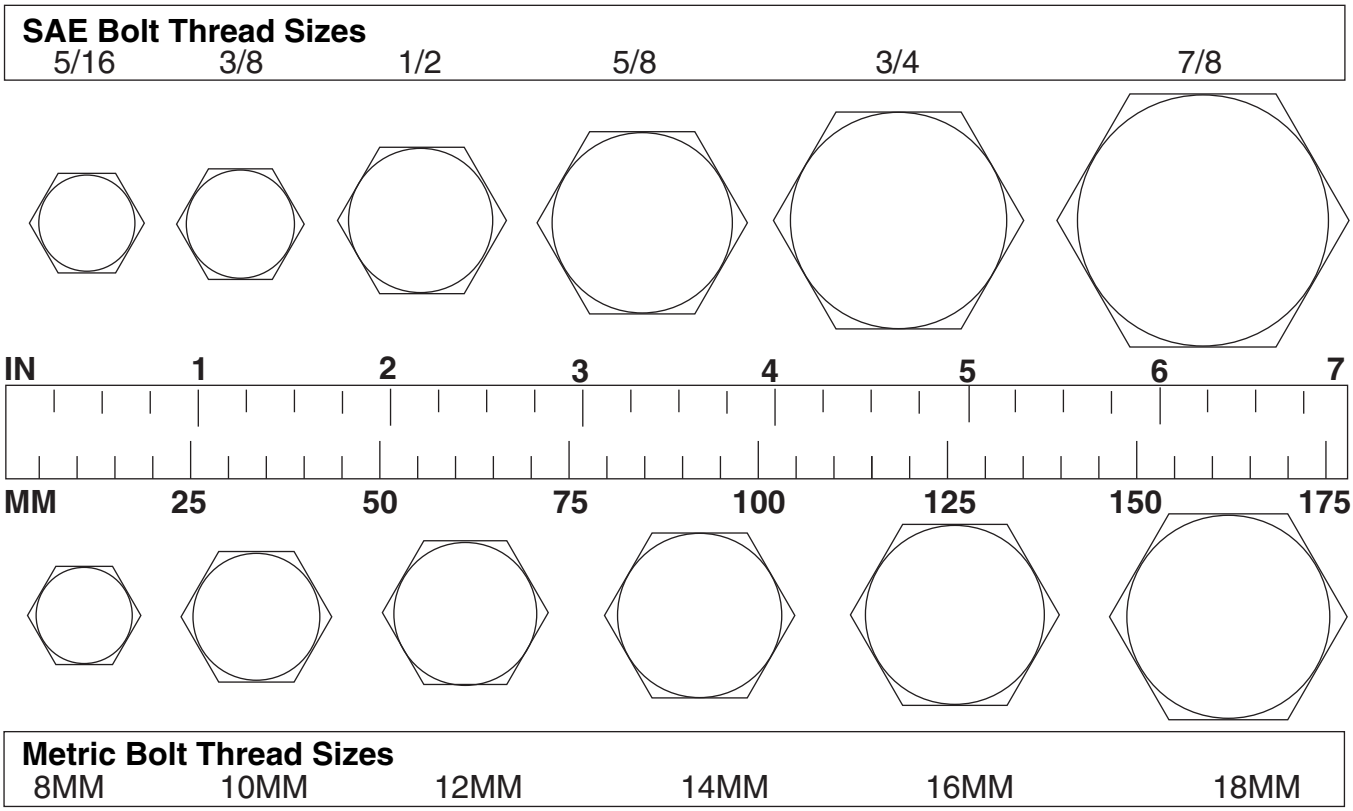




8/9/00

BOLT SIZE CHART

NOTE: Chart shows bolt thread sizes and corresponding head (wrench) sizes for standard SAE and metric bolts.



ABBREVIATIONS

AG ..... Agriculture
ASABE..... American Society of Agricultural & Biological Engineers (formerly ASAE)
ASAE ..... American Society of Agricultural Engineers
ATF ..... Automatic Transmission Fluid
BSPP .....British Standard Pipe Parallel
BSPTM ..... British Standard Pipe Tapered Male
CV.....Constant Velocity
CCW ..... Counter-Clockwise
CW.....Clockwise
F ..... Female
FT ..... Full Thread
GA ..... Gauge
GR (5, etc.) ..... Grade (5, etc.)
HHCS .....Hex Head Cap Screw
HT..... Heat-Treated
JIC .....Joint Industry Council 37° Degree Flare
LH .....Left Hand
LT..... Left
m.....Meter
mm.....Millimeter
M..... Male
MPa.....Mega Pascal
N.....Newton
NC .....National Coarse
NF .....National Fine
NPSM.....National Pipe Straight Mechanical
NPT ..... National Pipe Tapered
NPT SWF .....National Pipe Tapered Swivel Female
ORBM ..... O-Ring Boss - Male
P.....Pitch
PBY ..... Power-Beyond
psi.....Pounds per Square Inch
PTO..... Power Take Off
QD.....Quick Disconnect
RH .....Right Hand
ROPS ..... Roll-Over Protective Structure
RPM .....Revolutions Per Minute
RT ..... Right
SAE .....Society of Automotive Engineers
UNC .....Unified Coarse
UNF.....Unified Fine
UNS.....Unified Special

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WARRANTY

All Models Except Mow'n Machine™ Zero-Turn Mowers

Please Enter Information Below and Save for Future Reference.

Date Purchased: _____ From (Dealer): _____

Model Number: _____ Serial Number: _____

Woods Equipment Company ("WOODS") warrants this product to be free from defect in material and workmanship. Except as otherwise set forth below, the duration of this Warranty shall be for TWELVE (12) MONTHS COMMENCING ON THE DATE OF DELIVERY OF THE PRODUCT TO THE ORIGINAL PURCHASER.

All current model loaders and backhoes are warranted for two (2) years from the date of delivery to the original purchaser.

The warranty periods for specific parts or conditions are listed below:

Part or Condition Warranted	Model Number	Duration (from date of delivery to the original purchaser)
	All units invoiced after 4/30/2012	
Gearbox components	BB48X, BB60X, BB72X, BB84X, BB600X, BB720X, BB840X, BB6000X, BB7200X, BB8400X, DS1260, DSO1260, DS1440, TS1680,	6 years
	BW12, BW15LH, BW126X, BW180X, BW126XHD, BW180XHD, BW1260X, BW1800X,	
	BW240X, BW240XHD, BW1620X, BW2400X	
	DS96, DS120, RCC42, RD990X, PRD6000, PRD7200, PRD8400, S15CD, S20CD, S22CD, S25CD, S27CD, S30CD, TC/R74, TC/R68, TC/R60, TBW144, TBW180, TBW204, TSG50, S12ED, S15ED, S18ED, S20ED, TPD25, TPD35, TPD65, TPD95	
	RDC54, RD60, RD72, TBW150C, TS/R60, TS/R52, TS/R44, HC48, HC54, HC60, HC72, RC3.5, RC4, RC5, RC6	3 years (1 year if used in rental or commercial applications)
Blade spindles	RD990X, PRD6000, PRD7200, PRD8400, TBW144, TBW180, TBW204	3 years
Rust-through	BB600X, BB720X, BB840X, BB6000X, BB7200X, BB8400X, BW126X, BW180X, BW126XHD, BW180XHD, BW1260X, BW1800X, BW240, BW240HD, DS1260, DSO1260, DS1440, TS1680	10 years

Under no circumstances will this Warranty apply in the event that the product, in the good faith opinion of WOODS, has been subjected to improper operation, improper maintenance, misuse, or an accident. This Warranty does not apply in the event that the product has been materially modified or repaired by someone other than WOODS, a WOODS authorized dealer or distributor, and/or a WOODS authorized service center. This Warranty does not cover normal wear or tear, or normal maintenance items. This Warranty also does not cover repairs made with parts other than those obtainable through WOODS.

This Warranty is extended solely to the original purchaser of the product. Should the original purchaser sell or otherwise transfer this product to a third party, this Warranty does not transfer to the third party purchaser in any way. There are no third party beneficiaries of this Warranty.

WOODS makes no warranty, express or implied, with respect to engines, batteries, tires or other parts or accessories not manufactured by WOODS. Warranties for these items, if any, are provided separately by their respective manufacturers.

WOODS' obligation under this Warranty is limited to, at WOODS' option, the repair or replacement, free of charge, of the product if WOODS, in its sole discretion, deems it to be defective or in noncompliance with this Warranty. **The product must be returned to WOODS with proof of purchase within thirty (30) days after such defect or noncompliance is discovered or should have been discovered, routed through the dealer and distributor from whom the purchase was made, transportation charges prepaid.** WOODS shall complete such repair or replacement within a reasonable time after WOODS receives the product. THERE ARE NO OTHER REMEDIES UNDER THIS WARRANTY. THE REMEDY OF REPAIR OR REPLACEMENT IS THE SOLE AND EXCLUSIVE REMEDY UNDER THIS WARRANTY.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE OF THIS WARRANTY. WOODS MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, AND WOODS SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTY OF MERCHANTABILITY AND/OR ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

WOODS shall not be liable for any incidental or consequential losses, damages or expenses, arising directly or indirectly from the product, whether such claim is based upon breach of contract, breach of warranty, negligence, strict liability in tort or any other legal theory. Without limiting the generality of the foregoing, Woods specifically disclaims any damages relating to (i) lost profits, business, revenues or goodwill; (ii) loss of crops; (iii) loss because of delay in harvesting; (iv) any expense or loss incurred for labor, supplies, substitute machinery or rental; or (v) any other type of damage to property or economic loss.

This Warranty is subject to any existing conditions of supply which may directly affect WOODS' ability to obtain materials or manufacture replacement parts.

No agent, representative, dealer, distributor, serviceperson, salesperson, or employee of any company, including without limitation, WOODS, its authorized dealers, distributors, and service centers, is authorized to alter, modify, or enlarge this Warranty. Answers to any questions regarding warranty service and locations may be obtained by contacting:

Woods Equipment
A Blount International Company
2606 South Illinois Route 2
Post Office Box 1000
Oregon, Illinois 61061 USA
800-319-6637 tel
800-399-6637 fax
woodsequipment.com

WOODS®
Woods Equipment Company

ALITEC™
BMP®
CENTRAL FABRICATORS®
GANNON®
GILL®
WAIN-ROY®
WOODS®

WARRANTY

(Replacement Parts For All Models Except Mow'n Machine™
Zero-Turn Mowers and Woods Boundary™ Utility Vehicles)

Woods Equipment Company ("WOODS") warrants this product to be free from defect in material and workmanship for a period of ninety (90) days from the date of delivery of the product to the original purchaser with the exception of V-belts, which will be free of defect in material and workmanship for a period of 12 months.

Under no circumstances will this Warranty apply in the event that the product, in the good faith opinion of WOODS, has been subjected to improper operation, improper maintenance, misuse, or an accident. This Warranty does not cover normal wear or tear, or normal maintenance items.

This Warranty is extended solely to the original purchaser of the product. Should the original purchaser sell or otherwise transfer this product to a third party, this Warranty does not transfer to the third party purchaser in any way. There are no third party beneficiaries of this Warranty.

WOODS' obligation under this Warranty is limited to, at WOODS' option, the repair or replacement, free of charge, of the product if WOODS, in its sole discretion, deems it to be defective or in noncompliance with this Warranty. **The product must be returned to WOODS with proof of purchase within thirty (30) days after such defect or noncompliance is discovered or should have been discovered, routed through the dealer and distributor from whom the purchase was made, transportation charges prepaid.** WOODS shall complete such repair or replacement within a reasonable time after WOODS receives the product. THERE ARE NO OTHER REMEDIES UNDER THIS WARRANTY. THE REMEDY OF REPAIR OR REPLACEMENT IS THE SOLE AND EXCLUSIVE REMEDY UNDER THIS WARRANTY.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE OF THIS WARRANTY. WOODS MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, AND WOODS SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTY OF MERCHANTABILITY AND/OR ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

WOODS shall not be liable for any incidental or consequential losses, damages or expenses, arising directly or indirectly from the product, whether such claim is based upon breach of contract, breach of warranty, negligence, strict liability in tort or any other legal theory. Without limiting the generality of the foregoing, Woods specifically disclaims any damages relating to (i) lost profits, business, revenues or goodwill; (ii) loss of crops; (iii) loss because of delay in harvesting; (iv) any expense or loss incurred for labor, supplies, substitute machinery or rental; or (v) any other type of damage to property or economic loss.

This Warranty is subject to any existing conditions of supply which may directly affect WOODS' ability to obtain materials or manufacture replacement parts.

No agent, representative, dealer, distributor, service person, salesperson, or employee of any company, including without limitation, WOODS, its authorized dealers, distributors, and service centers, is authorized to alter, modify, or enlarge this Warranty.

Answers to any questions regarding warranty service and locations may be obtained by contacting:

ALITEC™
BMP®
CENTRAL FABRICATORS®
GANNON®
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WOODS®
Woods Equipment Company

Woods Equipment
A Blount International Company
2606 South Illinois Route 2
Post Office Box 1000
Oregon, Illinois 61061
800-319-6637 tel
800-399-6637 fax
woodsequipment.com

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